



Food (in)security in families of preschool children in a rural zone of Ceará*

(In) Segurança alimentar em famílias de pré-escolares de uma zona rural do Ceará

(In) Seguridad alimenticia en familias de preescolares de una zona rural del Ceará

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ABSTRACT

Objectives: To determine the prevalence of food (in)security among households in a rural zone of Maranguape, and to verify the association between socioeconomic variables and the degree of food (in)security. **Methods:** A descriptive study with a quantitative approach, conducted in the *Centro de Saúde da Família (CSF)*, *Center of Family Health*, in a rural zone in Maranguape - Ceará in September of 2009. The sample consisted of 200 families with preschool children who are seen in the CSF, applying the *Escala Brasileira de Insegurança Alimentar (EBIA)*, *Braslian Food Insecurity Scale*. **Results:** Of the families, 12% presented with food security and 88% with food insecurity. A statistically significant association was noted between the prevalence of food (in)security and education of the head of household ($p < 0.0001$), number of household members ($p = 0.018$), and family income ($p < 0.0001$). **Conclusion:** With the application of the EBIA, we could diagnose food (in)security, which enables nurses to offer health education interventions aimed at improving care related to alimentation.

Keywords: Food security; Prevalence; Child, preschool; Food consumption; Socioeconomic factors.

RESUMO

Objetivos: Detectar a prevalência da (in) segurança alimentar entre as famílias residentes na zona rural de Maranguape e verificar a associação entre as variáveis socioeconômicas e o grau de (in) segurança alimentar. **Métodos:** Estudo descritivo, com abordagem quantitativa, realizado no Centro de Saúde da Família (CSF) na zona rural de Maranguape-Ceará em setembro de 2009. A amostra constituiu-se de 200 famílias com crianças pré-escolares atendidas no CSF, sendo aplicada a Escala Brasileira de Insegurança Alimentar (EBIA). **Resultados:** Das famílias, 12% apresentaram segurança alimentar e 88% insegurança alimentar. Constatou-se associação estatisticamente significante entre a prevalência da (in) segurança alimentar e a escolaridade do responsável ($p \leq 0,0001$), número de moradores no domicílio ($p = 0,018$) e renda familiar ($p \leq 0,0001$). **Conclusão:** Com a aplicação da EBIA, pôde-se diagnosticar a (in) segurança alimentar, o que possibilita ao enfermeiro propor ações de educação em saúde, visando a melhorar os cuidados relativos à alimentação.

Descritores: Segurança alimentar e nutricional; Prevalência; Pré-escolar; Consumo de alimentos; Fatores socioeconômicos

RESUMEN

Objetivos: Detectar la prevalencia de la (in) seguridad alimenticia entre las familias residentes en la zona rural de Maranguape y verificar la asociación entre las variables socioeconómicas y el grado de (in) seguridad alimenticia. **Métodos:** Estudio descriptivo, con abordaje cuantitativo, realizado en el Centro de Salud de la Familia (CSF) en la zona rural de Maranguape-Ceará en setiembre del 2009. La muestra se constituyó de 200 familias con niños preescolares atendidos en el CSF, siendo aplicada la Escala Brasileña de Inseguridad Alimenticia (EBIA). **Resultados:** De las familias, el 12% presentaron seguridad alimenticia y el 88% inseguridad alimenticia. Se constató asociación estadísticamente significativa entre la prevalencia de la (in) seguridad alimenticia y la escolaridad del responsable ($p \leq 0,0001$), número de moradores en el domicilio ($p = 0,018$) e ingreso familiar ($p \leq 0,0001$). **Conclusión:** Con la aplicación de la EBIA, se puede diagnosticar la (in) seguridad alimenticia, lo que posibilita al enfermero proponer acciones de educación en salud, visando mejorar los cuidados relativos a la alimentación.

Descriptores: Seguridad alimentaria; Prevalencia; Preescolar; Consumo de Alimentos; Factores socioeconómicos

* Study conducted on Maranguape, metropolitan area of Fortaleza in Ceará, Brazil.

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INTRODUCTION

Food and nutrition are the basic constituents necessary for promoting and protecting health and also promote healthy growth and development. In human societies, access to adequate food and nutrition also increase an individual's likelihood of achieving an adequate standard of living ⁽¹⁾.

A recent evaluation by the Food and Agriculture Organization of the United States found that 1.02 billion people worldwide were undernourished in 2009, an increase from the 915 million individuals estimated in 2008 ⁽²⁾. Undernourished individuals are people who suffer from nutritional deficiencies, either because of a lack of food or a poor food quality or because of inadequate living and health conditions that prevent proper utilization of the available food ⁽³⁾.

In Brazil, the development of public policies to fight hunger and poverty based on the concept of food and nutritional security has enabled a new understanding of nutrition beyond the act of eating ⁽⁴⁾. The adverse effects of food insecurity are particularly severe in women, elderly adults and children ⁽⁵⁾, causing impaired cognitive function and development problems ⁽⁶⁾.

In this context, the concept of food security is particularly relevant. Food security refers to the regular and permanent access to quality food in sufficient quantity without having to compromise meeting other basic needs. This is based on promoting healthy food practices that respect cultural diversity and are socially, economically and environmentally sustainable ⁽⁷⁾.

Food safety concerns consistent access to food that is rich in vitamins and minerals, and it is not limited simply to the act of consuming these nutrients ⁽⁸⁾. To this end, the identification of living conditions and food availability in the everyday lives of families is an essential requirement for assessing food (in) security ⁽⁹⁾.

Facing this reality, the following questions emerge: Do families of preschool children residing in rural areas experience food insecurity? Are the socioeconomic and demographic conditions of households correlated with the levels of food (in) security?

To answer these questions, we applied the Brazilian Food Insecurity Scale (EBIA) in a rural municipality located in the metropolitan region of Fortaleza in the State of Ceará. Using the scale, we aimed to provide a plausible diagnosis that is consistent with the reality of the families' living conditions.

The choice of the municipality was based on the results from a previous study ⁽¹⁰⁾ conducted in the same rural area, which showed that children at the complementary feeding stage consumed foods with a low energy content and poor nutritional quality that were also relatively costly (yogurt, instant noodles and soft drinks). However, the

study also found that these families continued to experience precarious living conditions, which are likely to affect their food security situation.

The relevance of the present study is indicated by understanding food security issues may enable health professionals, especially nurses, to act consistently according to their target population's socioeconomic situation. This consistent action aims to educate the population about the importance of maintaining healthy eating habits while offering alternatives that fit the target population's reality and meet their families' nutritional needs.

Thus, we aimed to detect the prevalence of food (in) security among households in rural Maranguape and the association between socioeconomic variables and the degree of food (in) security.

METHODS

We conducted a descriptive study with a quantitative approach in a Family Health Center (CSF) situated in the district of Sapupara in the rural area of the municipality of Maranguape, located in the metropolitan region of Fortaleza, State of Ceará (Brazil).

The sample consisted of 200 families with preschool children aged three to six years who attended the CSF. The inclusion criteria were families of preschool children who were enrolled in the CSF and resided in the selected district of Sapupara. We did not include families whose members presented mental health or cognitive problems.

Data collection occurred in September 2009. Individual interviews with the children's families took place at the CSF. We used a socioeconomic questionnaire and the Brazilian Food Insecurity Scale (EBIA) ⁽¹¹⁾, which included 15 items related to the diet of the families and the children/adolescents. This questionnaire allowed us to evaluate the family's perception of food security ⁽¹²⁾. The scale is scored as follows: one point for each "yes" answer and zero points for "no" or "do not know" answers. The sum of these points allowed us to classify the families' situations as food secure (0 points), mild food insecure (1-5 points), moderate food insecure (6-10 points) and severe food insecure (11-15 points) ⁽¹¹⁾.

We analyzed only the positive (yes) and negative (no) answers because "do not know" responses were rare. As in previous studies ⁽¹³⁻¹⁷⁾, alternatives for positive responses (e.g., nearly every day, every few days, only in one or two days, and does not know or refusal to reply) were not evaluated.

It should also be noted that the selection of a positive alternative on the scale indicates that the family experiences food insecurity in their daily situations; i.e., the more "yes" responses, the greater the severity of the family's food insecurity.

Data were tabulated and processed using the Predictive Analytics Software (PASW), version 18. For the analysis, we applied descriptive statistics (absolute and relative frequencies) and tested for statistical significance using a *linear by linear* test, as described in the literature.

The research project was approved by the Ethics Committee of the Federal University of Ceará under Opinion No. 98/09. The research was conducted in compliance with ethical requirements for research involving humans, as described in Resolution 196/96⁽¹⁸⁾. The purpose of the research was explained to all respondents, and they all signed a consent form prior to participating.

RESULTS

The distribution of responses to the EBIA questionnaire can be evaluated based on the data presented in Table 1. Item 3 had the highest proportion (72%) of positive responses, whereas item 15 received the most negative responses (95%).

The prevalence of negative responses (ranging from 53.5% to 77%) to items 7, 8, 9, 10 and 11, which related to adult feeding in the household, demonstrated that food restriction situations, hunger and weight loss were minimized in the families. However, it is noteworthy that items 7 and 8 received a considerable number of positive responses, 46.5% and 46%, respectively.

Although variable, a relatively high proportion of negative responses (ranging from 35% to 95%) to items 5, 6, 12, 13, 14 and 15 was observed. These responses concerned the daily meals of the families' children. There were a significant number of positive responses (42.5%) to item 6.

Of the 200 families interviewed, 24 (12%) were in a food secure situation, but most families experienced some form of food insecurity (176; 88%). Of these, 70 (35%) were classified as mild insecure, 57 (28.5%) as moderate insecure and 49 (24.5%) and severe insecure (Figure 1).

We detected significant associations between the degree of food (in) security and socioeconomic variables (Table 2). There was a statistically significant association between the prevalence of food (in) security and parents'

Table 1. Items of the Brazilian Food Insecurity Scale used in interviews with families. Maranguape - CE, 2009.

Item	YES		NO	
	n	%	n	%
1. During the last three months were you worried that you would run out of food before being able to buy or receive more food?	132	66	68	34
2. During the last three months did you run out of food before having money to buy more?	105	52.5	95	47.5
3. During the last three months did you run out of money to have a healthy and varied diet?	144	72	55	27.5
4. During the last three months did you have to consume just a few foods because you ran out of money?	135	67.5	64	32
5. During the last three months were you unable to offer your children/adolescents a healthy and varied diet because you didn't have enough money?	130	65	70	35
6. During the last three months did any of the children/adolescents not eat enough because there wasn't enough money to buy food?	85	42.5	115	57.5
7. During the last three months did you or any adult in your household ever reduce the size of meals or skip meals because there wasn't enough money to buy food?	93	46.5	107	53.5
8. During the last three months did you ever eat less than what you thought you should because there wasn't enough money to buy food?	92	46	108	54
9. During the last three months did you ever feel hungry but didn't eat because there wasn't enough money to buy food?	66	33	134	67
10. During the last three months did you lose weight because you didn't have enough money to buy food?	48	24	151	75.5
11. During the last three months did you or any other adult in your household ever go without eating for a whole day or have just 1 meal in a whole day because there wasn't enough money to buy food?	45	22.5	154	77
12. During the last three months did you ever reduce the size of meals of your children/adolescents because there wasn't enough money to buy food?	77	38.5	123	61.5
13. During the last three months did your children/adolescents ever have to skip a meal because there wasn't enough money to buy food?	61	30.5	139	69.5
14. During the last three months were your children/adolescents ever hungry but you just couldn't buy more food?	54	27	143	73
15. During the last three months did your children ever go without food for a whole day because there wasn't enough money to buy food?	10	5	190	95

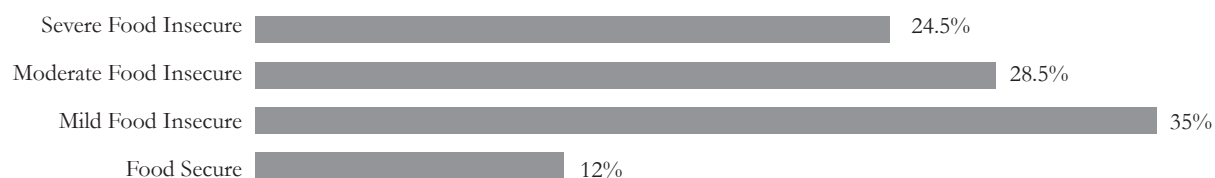


Figure 1. Distribution of families according to food security and the levels of food insecurity. Maranguape – (CE), 2009.

education levels ($p \leq 0.0001$), the number of household members ($p = 0.018$) and monthly household income ($p \leq 0.0001$). No statistically significant association between food (in) security and marital status ($p = 0.790$), work outside the home ($p = 0.625$) and the number of preschool-age children ($p = 0.662$) was observed.

DISCUSSION

In Brazil, the issue of food (in) security has been the focus of government attention. This issue has receives attention from a number of different approaches and has increasingly occupied the public policy stage ⁽¹⁹⁾.

Concern about the lack of food at home (item 1) was indicated by 132 (66%) of respondents, which is similar

to the proportion found in studies conducted in Quebec, Canada, where psychological insecurity was reported by 34 (62%) of the families interviewed ⁽²⁰⁾.

Regarding questions that addressed children's meals, item 5 received a high number of positive responses (65%), and the others (6, 12, 13, 14 and 15) had a higher percentage of negative responses. This response pattern may be associated with the severity of the items as the number of positive responses declined as the seriousness of the questions increased.

Research conducted with 213 women in Costa Rica found that the response to the "adults who went the whole day without eating some food" item of the version of the scale validated in that country was approximately 6.1%. The response to the "children who went a whole

Table 2. Association between indices of food security/insecurity and socioeconomic variables for families with preschool children in a rural area. Maranguape - CE, 2009.

VARIABLES	Food Secure	Mild Food Insecure	Moderate Food Insecure	Severe Food Insecure	p
	n (%)	n (%)	n (%)	n (%)	
Civil status					0.790
Married/stable relationship	18 (12.6)	50 (35.0)	40 (28.0)	35 (24.5)	
Single/other	6 (10.5)	20 (35.1)	17 (29.8)	14 (24.6)	
Parents' education levels					< 0.0001
None	-	4 (17.4)	3 (13.0)	16 (69.6)	
4 years	7 (7.2)	18 (18.6)	41 (42.3)	31 (32.0)	
≥ 4 years	17 (21.3)	48 (60.0)	13 (16.3)	2 (2.5)	
Work outside the home					0.625
Yes	1 (3.7)	13 (48.1)	5 (18.5)	8 (29.6)	
No	23 (13.3)	57 (32.9)	52 (30.1)	41 (23.7)	
Number of preschool-age children					0.662
1	23 (13.0)	60 (33.9)	51 (28.8)	43 (24.3)	
2	1 (4.3)	10 (43.5)	6 (26.1)	6 (26.1)	
Number of household members					0.018
2 to 4	16 (14.7)	38 (34.9)	30 (27.5)	25 (22.9)	
5 to 7	8 (10.8)	28 (37.8)	22 (29.7)	16 (21.6)	
8 or more	-	4 (23.5)	5 (29.4)	8 (47.1)	
Monthly household income					< 0.0001
Less than 1 minimum wage	4 (5.1)	23 (29.5)	25 (32.1)	26 (33.3)	
1 to 2 minimum wages	13 (12.9)	36 (35.6)	30 (29.7)	22 (21.8)	
3 to 4 minimum wages	7 (33.3)	11 (52.4)	2 (9.5)	1 (4.8)	

Linear-by-linear test

day without eating” item was positive in 2.8% of families⁽²¹⁾. These results differ from the present study, which showed 22.5% of positive responses regarding adults and 5% regarding children. However, the families’ protection of the children’s daily diet proved to be common to all of the studies cited.

Research conducted with indigenous families of preschool children in Canada confirms these findings. The rate of food insecurity among the adults in a household was higher than that of the children because the adults reduced their food intake and gave the child’s diet priority⁽²²⁾.

We found that 176 (88%) of interviewed families were food insecure. Similar levels were reported in a previous study that found 87% of rural families in the northeastern forest area reported food insecurity⁽¹³⁾ and a study that examined the status of food (in) security in the semi-arid northeast, which found 87% food insecurity⁽¹⁴⁾.

However, these results differ from those obtained from the National Household Sample Survey 2004. This study reported that throughout the country, only 34.8% of households were food insecure; of these, 16% were mild insecure, 12.3% were moderate insecure, and 6.5% were severe insecure. In the northeast region, the food insecurity level was 53.5%; 19.5% were mild insecure, 21.6% were moderate insecure, and 12.4% were severe insecure, with higher insecurity levels in rural (49.9%) than in urban (37.7%) areas⁽²³⁾.

Additionally, we found that a statistically significant association such variables as parents’ education levels, monthly household income and number of household members. Our results revealed that high levels of food insecurity were associated with reduced educational levels of the head of the family ($p \leq 0.0001$), a greater number of household members ($p = 0.018$) or lower monthly family income ($p \leq 0.0001$). An ecological study of 19,037 people in South Australia supports the finding that such variables were risk factors associated with food insecurity⁽²⁴⁾.

Research conducted in the municipality of Duque de Caxias (RJ) in 1,085 households also found that the proportion of families with moderate and severe food insecurity declined as the head of the family’s education level increased. However, mild food insecurity did not increase with the family head’s education level⁽¹⁵⁾. Furthermore, a study conducted in 1,045 households in the city of Pelotas (RS) also noted that the prevalence of food insecurity was higher among families with five or more household members⁽²⁵⁾.

Nevertheless, an analysis of food insecurity determinants in Brazil demonstrated that the variable with the greatest relevance to food insecurity was low

household income⁽²⁶⁾. This finding corroborates a study conducted in a rural municipality of Minas Gerais, which identified that, among families with incomes of less than the minimum wage, the food insecurity prevalence was 68.7%, and in families that earned salaries greater than or equal to the minimum wage, the food insecurity prevalence was 16.6%⁽¹⁶⁾. In the state of Paraíba, families with monthly incomes greater than the minimum wage rarely experienced severe food insecurity (0.9%) and had lower rates of moderate (3.5%) and mild (10.4%) insecurity⁽¹⁷⁾.

Dietary habits are known to be associated with economic and cultural factors that influence the availability of and access to food. Thus, the foods consumed by a family also tend to be accepted by the child⁽²⁷⁾.

We found that marital status and working outside the home were not significantly associated with food (in) security. However, research conducted nationwide found that for families in which mothers were married, the prevalence of food security (18%) and mild food insecurity (29.6%) were higher, while in families with an unmarried mother, the moderate (36.31%) and severe (24.37%) food insecurity were higher⁽²⁸⁾.

Although we did not find a statistically significant association between the number of preschool children and the prevalence of food (in)security in the families, we found that food security prevalence were higher in families with only one child compared with families with more than one child. This result supports the fact that the family’s attention to the child plays a key role in the child’s development by providing adequate food and strengthening the emotional bond, thus promoting healthier eating habits⁽²⁹⁾. Thus, the presence of fewer children may facilitate such actions and enable greater security.

In view of the financial constraints that some families experience, regional foods (including cashews, bananas, siriguelas, pumpkins and sweet potatoes) may provide a healthy, nutritious diet. These are generally inexpensive, readily available and of high nutritional value⁽¹⁰⁾. However, most individuals limit their use of local crops to the preparation of juices, ignoring their additional dietary benefits for their children⁽³⁰⁾.

Although national and international studies^(13,14, 20) have found similar results regarding food (in)security, the priority each country or region gives this issue is determined by political, economic and cultural influences on individual lifestyles and food choices. Nevertheless, it is believed that ensuring adequate nutrition for individuals should be a priority in political discussions in all countries and states, as this issue can influence education, housing and occupational opportunities and is critical to the survival of humanity.

CONCLUSION

The EBIA proved to be an important tool for identifying the food situations of families living in rural areas. However, a limitation of the study was that we did not consider in detail the frequencies of affirmative responses to the EBIA (almost all days, some days, only one or two days, do not know or unwilling to answer). Further analysis could improve our understanding of the research findings and allow us to reach new conclusions.

The context of this study provides an expanded examination of the social, economic and demographic associations with food (in) security. It provides a foundation for health professionals, especially nurses, to act as health educators and plan and implement interventions that include food items that are available

in the Brazilian regions. The inclusion of regional foods could improve the quality of infant feeding and promote proper child development.

Although our study was performed in rural areas of the metropolitan region of a state capital, the rate of food insecurity we identified was alarming. It is reasonable to assume that the nutritional reality for poorer populations in other Brazilian regions, including the rural northeast, is likely to be even more insecure.

The academic and government participation is imperative for establishing policies and development programs to combat food insecurity. Furthermore, we emphasize that few municipalities have conducted surveys to assess food and nutritional security using the EBIA. The use of such scales must be encouraged, as they could be used to inform the development of effective policies to combat food insecurity and hunger both regionally and nationally.

REFERENCES

1. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Política nacional de alimentação e nutrição. Brasília (DF): Ministério da Saúde; 2003.
2. Food and Agriculture Organization of the United Nations (FAO). The state of food insecurity in the world 2009: economic crises – impacts and lessons learned. Rome: FAO; 2009.
3. Brasil. Ministério da Saúde. Estudo de caso Brasil: a integração das ações de alimentação e nutrição nos planos de desenvolvimento nacional para o alcance das metas do milênio no contexto do direito humano à alimentação adequada. Brasília (DF): Ministério da Saúde; 2005.
4. Carneiro DG, Magalhães KL, Vasconcelos AC, Cruz PJ. O agente comunitário de saúde e a promoção da segurança alimentar e nutricional na estratégia saúde da família: reflexões a partir de uma experiência educativa. *Rev APS*. 2010; 13(4): 510-17.
5. Karnik A, Foster BA, Mayer V, Pratomo V, McKee D, Maher S, et al. Food insecurity and obesity in New York City primary care clinics. *Med Care*. 2011; 49(7): 658-61.
6. Cook JT, Frank DA, Casey PH, Rose-Jacobs R, Black MM, Chilton M, et al. A brief indicator of household energy security: associations with food security, child health, and child development in US infants and toddlers. *Pediatrics*. 2008; 122(4): 867-75.
7. Conferência Nacional de Segurança Alimentar (CNSA). Relatório Final: a construção da política de segurança alimentar e nutricional. Olinda (PE): CNSA; 2004.
8. Recine E, Vasconcelos AB. Políticas nacionais e o campo da alimentação e nutrição em saúde coletiva: cenário atual. *Ciênc Saúde Coletiva*. 2011; 16(1): 73-9.
9. Osório MM, Ribeiro MA, Costa EC, Silva SP, Fernandes CE. Disponibilidade familiar de alimentos na Zona da Mata e Semi-Árido do Nordeste do Brasil. *Rev Nutr*. 2009; 22(3): 319-29.
10. Martins MC, Frota MA. Fatores que interferem na utilização de alimentos regionais na cidade de Maranguape, Ceará. *Cad Saúde Colet (Rio J)*. 2007; 15(2): 169-82.
11. Segall-Corrêa AM, Pérez-Escamilla R, Maranhã LK, Sampaio MFA. (In) Segurança alimentar no Brasil: validação de metodologia para acompanhamento e avaliação. Relatório Técnico. Campinas (SP); 2004.
12. Pérez-Escamilla R, Segall-Corrêa AM. Food insecurity measurement and indicators. *Rev Nutr*. 2008; 21(Supl): 15S-26S.
13. Oliveira JS, Lira PI, Maia SR, Sequeira LA, Amorim RC, Batista Filho M. Insegurança alimentar e estado nutricional de crianças de Gameleira, zona da mata do Nordeste brasileiro. *Rev Bras Saude Mater Infant*. 2010; 10(2): 237-45.
14. Oliveira JS, Lira PI, Andrade SL, Sales AC, Maia SR, Batista Filho M. Insegurança alimentar e estado nutricional de crianças de São João do Tigre, no semi-árido do Nordeste. *Rev Bras Epidemiol*. 2009; 12(3): 413-23.
15. Salles-Costa R, Pereira RA, Vasconcelos MT, Veiga GV, Marins VM, Jardim BC, et al. Associação entre fatores socioeconômicos e insegurança alimentar: estudo de base populacional na Região Metropolitana do Rio de Janeiro, Brasil. *Rev Nutr*. 2008; 21(Supl): 99S-109S.
16. Nobre LN, Murta NM, Souza MM, Ferreira NC, Cardoso LM, Hamacek FR. Segurança alimentar em uma comunidade rural no Alto Vale do Jequitinhonha/MG. *Segur Aliment Nutricional*. 2009; 16(1): 18-31.
17. Vianna RP, Segall-Corrêa AM. Insegurança alimentar das famílias residentes em municípios do interior do Estado da Paraíba, Brasil. *Rev Nutr*. 2008; 21(Supl): 111S-122S.
18. Brasil. Ministério da Saúde. Conselho Nacional de Saúde. Resolução n.196, de 10 de outubro de 1996. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da República Federativa do Brasil, Brasília (DF); 2003.
19. Pereira RA, Santos LM. A dimensão da insegurança alimentar [editorial]. *Rev Nutr*. 2008; 21(Supl): 7S-13S.
20. Hamelin AM, Mercier C, Bédard A. Discrepancies in households and other stakeholders viewpoints on the food security experience: a gap to address. *Health Educ Res*. 2009; 25(3): 401-12.
21. González W, Jiménez A, Madrigal G, Muñoz LM, Frongillo EA. Development and validation of measure of household food insecurity in urban Costa Rica confirms proposed generic questionnaire. *J Nutr*. 2008; 138(3): 587-92.
22. Egeland GM, Pacey A, Cao Z, Sobol I. Food insecurity among Inuit preschoolers: Nunavut Inuit Child Health Survey, 2007-2008. *CMAJ*. 2010; 182(3): 243-48.

23. Instituto Brasileiro de Geografia e Estatística (IBGE). IBGE traça perfil inédito sobre segurança alimentar no Brasil. Brasília (DF): IBGE; 2006.
24. Foley W, Ward P, Carter P, Coveney J, Tsourtos G, Taylor A. An ecological analysis of factors associated with food insecurity in South Australia, 2002-7. *Public Health Nutr.* 2009; 13(2): 215-21.
25. Santos JV, Gigante DP, Domingues MR. Prevalência de insegurança alimentar em Pelotas, Rio Grande do Sul, Brasil, e estado nutricional de indivíduos que vivem nessa condição. *Cad Saúde Pública.* 2010; 26(1):41-9.
26. Hoffmann R. Determinantes da insegurança alimentar no Brasil: análise dos dados da PNAD de 2004. *Segur Aliment Nutricional.* 2008; 15(1): 49-61.
27. Salve JM, Silva IA. Representações sociais de mães sobre a introdução de alimentos complementares para lactentes. *Acta Paul Enferm.* 2009; 22(1): 43-8.
28. Instituto Brasileiro de Análises Sociais e Econômicas (IBASE). Repercussões do Programa Bolsa Família na segurança alimentar e nutricional das famílias beneficiadas. Documento síntese. Rio de Janeiro: IBASE; 2008.
29. Vieira VL, Souza MP, Cervato-Mancuso AM. Insegurança alimentar, vínculo mãe-filho e desnutrição infantil em área de alta vulnerabilidade social. *Rev Bras Saude Mater Infant.* 2010; 10(2):199-207.
30. Martins MC, Ximenes LB, Casimiro CF, Silveira VG, Frota MA. Estratégia educativa com enfoque nos hábitos alimentares de crianças: alimentos regionais. *Cogitare Enferm.* 2009; 14(3): 463-69.