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Research Article

Evaluation of the Food and Nutritional Security to Population Victim of the Armed Conflict

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Abstract: The objective of the study was to determine the prevalence of food and nutritional security in the households of Villa Clarín, through the application of the Scales of food security used in the National Survey of the Nutritional Situation ENSIN 2010. Villa Clarin is located to 200 m of the Clarin channel next to Magdalena river, in front of the village of Palermo, municipality of Sitio Nuevo, Magdalena. Formed by 84 families, considered a settlement of victims of the armed conflict of the departments (Magdalena, Cesar, Bolívar), established approximately in the year 2000. The type of study was descriptive with a quantitative approach. The 69 households surveyed showed a prevalence of food insecurity of 92.7%, with both scales (higher-than the national proportion reported in ENSIN 2010, 42.7%). However, in the Latin American scale of food security, for having a stricter filter, the level of severe food insecurity was 59.4%, higher than the one showed by the food security scale at home with 23.2%. The food insecurity was significantly associated with sociodemographic characteristics, housing conditions and nutritional status. These results indicate that the settlement must have access to the food and nutritional security policies designed by the government for post-conflict actions.

Keywords: Displaced, food insecurity, households, poverty, public policies

INTRODUCTION

As an essential tool to assess, the food and nutritional security, many countries have adopted the Latin American and Caribbean Food Security Scale (ELCSA) with the purpose of establishing interventions of positive impact on households that so require. On the other hand, development organizations and governments that are committed to this effort need this valid and reliable system of evaluation and monitoring, to improve the applications of politics and programs aimed at the eradication of hunger and to the improvement of food and nutritional insecurity.

Colombia is one of the countries that sought to evaluate food and nutritional security in households for which reason adopted this method, being used in the 2010 National Survey of Food and Nutrition Situation (ICBF, 2010). As a whole with the one used in the ENSIN 2005, called food security scale in the household (ICBF, 2005).

The concept of food and nutritional security has been evolving across the time due to the multiple aspects that make it up. In the 70s, it was centered only on food supply and availability, because of the crisis that left World War II. In the 90s it took strength the nutritional importance and complexity of the concept, as a multidimensional and multisectoral. Therefore, in the year 1996 the World Food Summit adopted the following definition that maintained until the year 2006.

"Food security exists when all people at all times have physical and economic access to enough safe and nutritious food to meet their food needs and their food preferences to lead an active and healthy life" (FAO, 2012).

Following the guidelines set out in the Millennium Development Goals and by the established commitments, Colombia defined the food and nutritional security concept in the National Politics of Food and Nutritional Security, as followed:

"Food and Nutrition Security is the Sufficient and stable availability of food, access and timely and permanent consumption of the same in quantity, quality and safety for all persons under conditions that allow their appropriate biological utilization, to lead a healthy and active life" (DNP, 2008).

At national level, the ENSIN 2010 reported that food and nutritional security in households was 57.3% and total food insecurity in a 42.7%.

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A study carried out in the locality of Guasca, Cundinamarca in 2008 characterized the perception on food and nutritional security of households, it showed that 82% of households were safe, the 15% of the population in mild uncertainty and the remaining 2% moderate (Fajardo, 2008).

The interdisciplinary research Group on Food and Nutritional Security (GRIINSAN), of the School of Nutrition and Dietetics of the Universidad del Atlántico developed this study, to determine the prevalence of food and nutrition security through the application of safety scales foods used in the National Survey of the Nutritional Situation.

MATERIALS AND METHODS

A descriptive study was carried out, with a quantitative approach in the households of the community of Villa Clarín, in Palermo, Magdalena. The village is made up of eighty-four families and has been a settlement of displaced population victims of the armed conflict, located at about 200 m from the Channel Clarín, on the Magdalena River, opposite the township of Palermo, municipality of Sitio Nuevo, department of Magdalena, Colombia. The sample of 69 households represents 82% of all eligible households, selected by random sampling.

For the calculation of the representative sample, the following formula was applied:

$$n = (K\text{-}2, N.P.q) / ((E2, N\text{-}1) + (K2, P.q))$$

where,

K = Value of a standard normal probability distribution, that corresponds to a confidence level of 95% (1.96)
p = Expected factor frequency to study (prevalence)
q = (1-p)
E = Margin of error
N = Population size
n = Definitive sample size

Inclusion criteria: Permanent resident of Villa Clarín for 1 year minimum.

Exclusion criteria: Families who did not sign informed consent.

Data collection: Two previously trained nutritionists collected the data during June to July of 2015, through personal interviews of the householder in their homes. To collect information was used the national survey of the nutrition in Colombia, ENSIN 2010, which consists of a scale integrated by the household food safety scale (ISAH in Spanish) used in ENSIN 2005 and the scale Latin American and Caribbean food Security (ELCSA in Spanish). The survey consists of the following items: Socio-demographic characteristics: Personal data of the household head member, components and conditions of housing, number of family members, the gender of head of home, affiliation to health care systems, educational level.

Integrated food and nutrition security scale: It consists of a questionnaire of 25 questions, which emphasize in the axes of the food and nutritional safety, availability, access and consumption of foods to which the respondent answered yes or no. When the answer was yes, it was proceeded to ask if that situation occurred always, sometimes or rarely. The biological utilization was evaluated through the nutritional status, measuring the weight and size of the different members of the household. The data processing and analysis were done using the Epi-Info program version 7.0.

Table 1 shows the cut-off points used to evaluate food and nutritional security in the households of Villa Clarín Palermo Magdalena.

Ethical aspects: In the execution of the study was taken into account Resolution 8430 of the Ministry of Health 1993, which determines the absence of risks for the participants, also had the approval from the Research Committee of the Universidad del Atlántico and a community leader of the population. The methodology of the research was informed to the community and the informed consent given as well as the corresponding consent form issued, as proof of voluntary participation, were elaborated based on the same Resolution.

RESULTS AND DISCUSSION

In the 69 households of Villa Clarín the prevalence of food insecurity according to the Food Insecurity Scale at Home (ISAH), was 92.7%, distributed as follows: Low or Mild 24.6% equivalent to 17 households, Moderate 44.9% equal to 31 families and Severe 23.2% equivalent to 16 households. Meanwhile, the Latin American and Caribbean scale of food security ELCSA also showed a prevalence of 92.7% just like the one obtained with the scale ISAH. However, this differs in the distribution according to intensity level registering 14.5% of households in mild insecurity, 18.8% in moderate vulnerability and 59.4% in severe food insecurity (Fig. 1).

Regarding the sociodemographic variables in the households of Villa Clarín, the highest prevalence of ISAH was found in households composed of adults and children under 18 years of age (91.3%). One hundred percent of families made up of less than 5 people and in extended, compound and unipersonal families were found to be food insecure. The ISAH level that had the highest prevalence in these variables was moderate ISAH, with the exception of households composed of one member or unipersonal with a higher prevalence of mild or low ISAH (Table 2).

On the other hand, it was detected that the lower the level of schooling of the head of the household, the greater the frequency of ISAH and the severity with which it is presented, however, among those with low

Table 1: Classification of household food and nutritional security level

	ISAH classification (ENSIN 2005-ENSIN 2010)			
Type of household	Food secure	Mild food insecure	Moderate food insecure	Severe food insecure
Household without children	0	1-7	8-14	≥15
Household with children (under 18)	0	1-12	13-24	≥25
	ELCSA classification (ENSIN 2010)			
Type of household	Food secure	Mild food insecure	Moderate food insecure	Severe food insecure
Household without children	0	1 -4	5-7	≥8
Household with children (under 18)	0	1-6	7 a 11	≥12

ENSIN 2010. P. 350

Table 2: Food and nutritional security in the households of Villa Clarín according to family composition, family size, typology and educational level of the households ISAH

				Food and nutritional insecurity level		
Family composition	Total families N°	Safe (%)	Unsafe (%)	Low (%)	Moderate (%)	Severe (%)
Families composed of adults	11	0.0	100.0	27.3	54.5	18.2
Families composed of adults and under 18 years	58	8.6	91.3	24.1	43.1	24.1
People who integrated households						
1 member	4	0.0	100.0	50.0	25.0	25.0
2 to 4 members	21	0.0	99.9	33.3	47.6	19.0
5 to 6 members	29	13.8	86.2	17.2	41.4	27.6
> = 7 members	15	6.7	93.3	20.0	53.3	20.0
Typology of the households						
Nuclear family	41	9.8	90.3	22.0	46.3	22.0
Couple without children	6	16.7	83.4	16.7	50.0	16.7
Long family	7	0.0	100.1	42.9	28.6	28.6
Composite family	10	0.0	100.0	10.0	60.0	30.0
One-person	5	0.0	100.0	60.0	20.0	20.0
Educational level of the chief of the household						
No studies	17	0.0	100.0	17.6	41.2	41.2
Elementary school incomplete	16	0.0	100.0	25.0	50.0	25.0
Elementary school complete	17	11.8	88.2	11.8	52.9	23.5
High school incomplete	14	14.3	85.7	35.7	42.9	7.1
High school complete	4	0.0	100.0	75.0	25.0	0.0
Technical	1	100.0	0.0	0.0	0.0	0.0

Survey of food and security in the household of Villa Clarin 2015

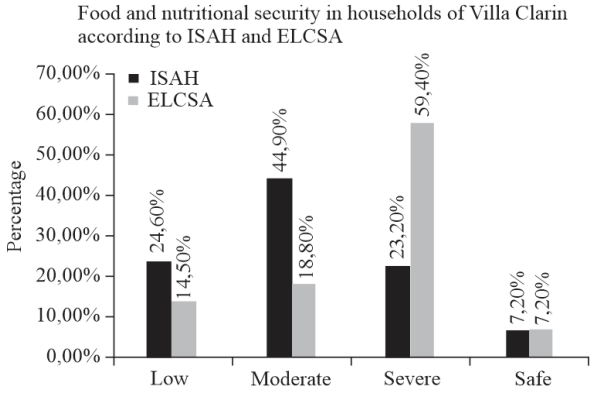

Fig. 1: Food and nutritional security in the households of Villa Clarín according to ELCSA and ISAH

levels of schooling, there were safe household in a lower proportion (Table 2).

According to the gender of the head of the household, the ISAH prevailed 94.5% in households with men as head of household. However, the highest prevalence of moderate and severe ISAH was present in 75.1% of households with women as head of the family (Table 3). Regarding the occupation of the head of the household, those who had a formal job were found 100% safe, while households with informal jobs had ISAH at different levels.

In overcrowding conditions, most of Villa Clarín's homes were found in overcrowding and critical overcrowding. The results do not show a significant difference in the levels of ISAH, with respect to non-overcrowded households, because only 7.2% of all households were found safe, it is reflected that moderate ISAH levels prevailed. The frequency of food insecurity in Villa Clarín households is higher in households with unconsolidated homes; however, food insecurity persists less frequently in households with consolidated or consolidating homes (Table 4).

Likewise, 27 of the surveyed families have some type of seeding in their homes, only 7.4% of them were safe, with moderate ISAH prevailing with 44.4%, followed by mild ISAH by 25% and severe with 22.2%.

On the other hand, among the families that do not produce food for consumption, the percentages of food security and insecurity do not show significant differences, with respect to households that did produce food for self-consumption (Table 5).

According to the nutritional profile of household's members, the prevalence of ISAH was significantly

Table 3: Food and nutritional security in the households of Villa Clarín according to gender the chief of the household

Gender the chief of the household	Total families N°	Safe (%)	Unsafe (%)	Food and nutritional insecurity level		
				Low (%)	Moderate (%)	Severe (%)
Male	37	5.4	94.5	32.4	45.9	16.2
Female	32	9.4	90.7	15.6	43.8	31.3
Total nº	69	5.0	64.0	17.0	31.0	16.0
Total (%)	100	7.2	92.7	24.6	44.9	23.2

Survey of food and security in the household of Villa Clarin 2015

Table 4: Food and nutritional security in the households of Villa Clarín according to overcrowding and housing conditions

Overcrowding	Total families	Safe (%)	Unsafe (%)	Food and nutritional insecurity level		
				Low (%)	Moderate (%)	Severe (%)
No overcrowding	26	11.5	88.4	26.9	50.0	11.5
Overcrowding	33	3.0	97.0	15.2	48.5	33.3
Critical overcrowding	10	10.0	90.0	50.0	20.0	20.0
Total nº	69	5.0	64.0	17.0	31.0	16.0
Total (%)	100	7.2	92.7	24.6	44.9	23.2
Housing conditions						
No consolidated	46	6.5	93.5	15.2	50.0	28.3
Consolidation process	21	4.8	95.2	47.6	33.3	14.3
Consolidated	2	50.0	50.0	0.0	50.0	0.0
Total nº	69	5.0	64.0	17.0	31.0	16.0
Total (%)	100	7.2	92.7	24.6	44.9	23.2

Survey of food and security in the household of Villa Clarin 2015

Table 5: Food and nutritional security in the households of Villa Clarín according to food production and self-consumption ISAH

Food production	Total families Nº	Safe (%)	Unsafe (%)	Safety level		
				Low (%)	Moderate (%)	Severe (%)
Yes	27	7.4	92.5	25.9	44.4	22.2
No	42	7.1	92.8	23.8	45.2	23.8
Total nº	69	5.0	64.0	17.0	31.0	16.0
Total (%)	100	7.2	92.7	24.6	44.9	23.2
Food self-consumption						
Yes	27	7.4	92.5	25.9	44.4	22.2
Total nº	27	2.0	25.0	7.0	12.0	6.0
Total (%)	100	7.2	92.5	24.9	44.4	22.2

Survey of food and security in the household of Villa Clarin 2015

high in all patterns. However, in families who found themselves safe, adults were on overweight and obesity and children under the age of 18 were obese or overweight, under nutrition or risk of malnutrition. On the other hand, among the families that were unsafe prevailed the ISAH moderated in 44.9%, opposite to 24.6% of low ISAH and 23.2% of severe ISAH (Table 6). The households with the highest prevalence of moderate and severe ISAH were those with 18 years old minorsat risk of under nutrition and adults in malnourished. Followed by those with 18 years old minors malnourished and all adults in adequate nutritional status, 18 years old minors at risk of under nutrition and adults in overweight and obesity and 18 years old minors at risk of under nutrition and adults in adequate nutritional status.

The homes of Villa Clarín that participated in the ISAH scale presented a food insecurity prevalence of 92.7% being this same result found using the ELCSA. However, due to the stricter filter of the ELCSA scale, the level of moderate insecurity was higher than that yields for the scale ISAH being this prevalence higher than those reported for households at the national level with 42.7 and 57.2% using the ELCSA scale, also higher than the 51.7% in the department of Magdalena, according to the ENSIN 2010.

Fajardo (2008) found high food insecurity prevalence on the study carried out in the locality of Guasca Cundinamarca, where the perception of food and nutritional security of households characterized showed that 82% of households were safe. It also showed that 17% presented a state of food insecurity, classified as follows: 15% of the population possesses low food insecurity and the remaining 2% moderate food insecurity. Since Villa Clarín is part of the rural area of Palermo Magdalena, the prevalence of food insecurity is higher than the national prevalence of rural areas (57.5%) according to ENSIN 2010. This situation coincides with the one for those screened on the study of characterization of Colombian households in insecurity Food according to Quality of life (Álvarez-Uribe *et al*., 2010).

Regarding the gender of the head of the household, ENSIN 2010 reported that families with female heads of households had a higher prevalence of food insecurity, this situation reflected in the homes of Villa

Table 6: Food and nutritional security in the households of Villa Clarín according to nutritional profile

Households nutritional profile	Total families	Safe (%)	Unsafe (%)	Food and nutritional insecurity level		
				Low (%)	Moderate (%)	Severe (%)
Appropriate nutritional status of all its members	6	0.0	100.0	16.7	50.0	33.3
18 years old minors and adults in overweight and obesity	3	33.3	66.6	33.3	33.3	0.0
18 years old minors malnourished and adults in overweight and obesity	14	14.3	85.8	28.6	28.6	28.6
All 18 years old minors in adequate nutritional status and adults overweight and obesity	2	0.0	100.0	50.0	50.0	0.0
18 years old minors malnourished and all adults in adequate nutritional status	9	0.0	100.0	11.1	55.6 88.9	33.3
18 years old minors and adults malnourished and 18 years old minors and adults in overweight and obesity	8	0.0	100.0	50.0	50.0	0.0
18 years old minors in overweight and obesity and adults in adequate nutritional status	1	0.0	100.0	100.0	0.0	0.0
18 years old minors at risk of under nutrition and adults in adequate nutritional status	4	0.0	100.0	25.0	25 75	50.0
18 years old minors at risk of under nutrition and adults in malnourished	2	0.0	100.0	0.0	50 100	50.0
18 years old minors at risk of under nutrition and adults in overweight and obesity	13	16.7	83.3	0.0	50 83.3	33.3
Other classification	7	0.0	100.0	42.9	57.1	0.0
Total nº	69	5.0	64.0	17.0	31.0	16.0
Total (%)	100	7.2	92.7	24.6	44.9	23.2

Survey of food and security in the household of Villa Clarin 2015

Clarín where 46.37% of these households presented the higher incidence of moderate and severe ISAH, respectively. According to studies carried out on the characterization of families, this situation is due to the low labor insertion of women, because they devote more time to housework and childcare, activities not remunerated. Households where the head of the family was engaged in informal employment, the prevalence of insecurity was significantly high and ENSIN 2010 reflected that homes that found themselves looking for work at the time of applying the instrument had an elevated prevalence of moderate and moderate ISAH severe. Households with the highest ISAH index were male-headed households, while female-headed households had the highest rates of severe ISAH, corroborating the above.

Regarding the affiliation to the General System of Social and Health Care (SGSSS in Spanish), most of the households in Villa Clarín have it, as it is the responsibility of the Government to guarantee it. However, this population homes do not have a legal electrical connection and according to the classification system used in Colombia called SISBEN all of them are in poverty situation, classified as SISBEN Level 1. This same case was demonstrated in the ENSIN 2010, in households that did not have stratification, or had illegal connections to the electricity networks, having the highest prevalence of ISAH. The result of overcrowding in this settlement differs from that of ENSIN 2010, because all households with or without overcrowding had a moderate ISAH index, while that of the 2010 Colombian Nutrition Situation Survey reported that families with a higher prevalence of ISAH were those that were overcrowded and critically overcrowded. This information coincides with results found in a study conducted by the University of Antioquia in 2008, which stated that 59.5% of households in critical overcrowding were food insecure. The prevalence of moderate and severe household food insecurity in families with significant overcrowding was twice that reported for non-overcrowded homes. Rural households with critical overcrowding had a higher incidence of food insecurity in 65.7% than in urban houses with this same condition, with 55.0%. (Uribe and Restrepo, 2008) The majority of households in Villa Clarín live in unconsolidated housing, a situation that increases the prevalence of ISAH.

As for the nutritional profiles of the households of Villa Clarín, the prevalence of ISAH was evident in all nutritional patterns. This same situation observed in the results of the ENSIN 2010, with the aggravating fact that the food secure households are families where the under 18 and adults are overweight and obese largely.

About households made up only of adults, as well as adults and under 18-year-olds, the level of ISAH did not report significant differences, with the results obtained in ENSIN 2010. Instead, there is a similarity with this one, because households made up of adults and under the age of 18 presented 8.6 points difference with the ones with adults only, a similar figure showed the ENSIN 2010 with 8.5% point's difference.

Regarding the number of members/household, it observed that the ISAH prevails to a higher degree in the large families, similar to the results reported in the ENSIN 2010, which showed that food insecurity in households is directly proportional to the large families with few resources. Regarding the typology of the family, the prevalence in the ISAH grade was higher in the extensive, composites and single-person families; ENSIN 2010 recognized this pattern of behavior in single-person households.

On the other hand, the result of the level of food and nutritional insecurity according to the educational

level of the household head showed that in households with low levels of schooling the percentage of ISAH was higher. While the results recorded by ENSIN 2010, presented a drop in ISAH levels probably because the families studied had a higher level of education. The above reaffirms what many studies have pointed out, the inverse relation between the higher educational level and the lower level of food insecurity and the opposite. Because the higher levels of education, allow labor increase to positions with higher wages, which enable them to have higher purchasing power and access to a better and complete basic food basket.

CONCLUSION

At the end of the present study, is reconfirmed that it is necessary to use the Latin American and Caribbean Food Security Scale (ELCSA) because it allows the construction of a baseline to measure food and nutritional security for both rural and urban sectors. This baseline helps to measure the impact of programs and public policies for each region and correct their course at the required time. On the other hand, it became clear that the ISAH scale applied in the households of Villa Clarín was the one that reported a higher prevalence of moderate ISAH, about the ELCSA that reported a higher incidence of severe ISAH due to its stricter filter. Likewise, mild and severe ISAH showed a higher prevalence in the relation of all the variables studied in this investigation.

Experience has shown that public policies alone are not enough if their natural mourners who are involved in their planning and execution do not accompany them. As well as their participation in development plans that include the problem and consider the opportunities created by the State for the attention of the Post-Conflict and to have the possibility of combating food insecurity in Colombian households, with a real development of food and nutrition security policies.

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CONFLICT OF INTEREST

Authors disclose that there is no conflict of interest.

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