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NUTRITION AND HEALTH IN THE URBAN AREA OF COSTA RICA

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SUMMARY Costa Rica, a Central American country, has not escaped the phenomena of rapid growth of a concentrated urban population. Thus, 60% of the country's total inhabitants are located in the Central Valley which is characteristically urban. Although the Government cares for health and education in both urban and rural areas, there is a lack of rules and guidance to control urban growth.

Since the study of the nutritional status of a given population cannot be made in the same way for all age groups, this paper concentrates on the nutrition of preschool children. The main objectives of this article are: to describe the current nutritional situation of children living in urban areas of the country, with emphasis on the Metropolitan Area, and to discuss what determines such a condition.

In 1990, 13.1 percent and 23.1 percent of the country's population, was composed of children between 0-4 and 5-14 years respectively. The first age group showed (congenital diseases as the main cause of death), the second age group showed accidents as the main cause of death. This mortality pattern indicates that malnutrition is no longer an important cause of morbidity or death in Costa Rica.

However, recent studies have demonstrated the presence of malnutrition in poverty stricken urban settings. This fact, suggests that nutritional deterioration is being observed among urban groups of poor socioeconomic conditions.

INTRODUCTION

Costa Rica, a Central American country covers an area of 52000 square kilometres with a population of nearly three and a half million in January 1992. This country has the following characteristics which distinguishes it from other countries : an economy based on agriculture, a century of democracy, 40 years without an army, primary and secondary schooling free of charge, the guarantee of women's equality and no reelection of political leaders. According to the last national census in 1984, the country only showed 7% illiteracy. In 1987, the government expenditure on education represented 20% of the national budget (PAHO, 1990).

Since its independence in 1821, different administrations have shown a strong political will and financial support provided by the government for health related programmes. Thus since 1940 the setting-out and enforcement of social policies and the creation of relevant institutions have brought about an infrastructure for providing health and nutritional services to the most needy.

Rapid urban growth particularly during the second half of this century has also taken place in Costa Rica, where it is more noticeable since 20% of the territory is dedicated to national parks and forests.

"Urbanisation" can be defined as the process of rapid growth in terms of size and importance of a given population in a given area 40% of the total population of the country is currently concentrated in the Central Valley of Costa Rica.

Located in this valley, there is the Metropolitan Area which contains 28% of the country's population in 262 square kilometres, with a population density of 513 in comparison with a population density of 59 for the rest of the country (Sosa, 1991).

Because the Costa Rican economy is based on agriculture, the majority of social programmes are focused on rural areas. For this reason, attention to families living in urban areas has been postponed to the point that satisfaction of basic needs is now a main worry for the government (MIDEPLAN, 1991).

With the purpose of presenting the health and nutrition situation of people living in urban areas of Costa Rica at the "2nd Latin American Workshop on Nutrition and Health in Urban Areas", the following paper has as its objetives a) to describe the socioeconomic conditions in which urban populations live, particularly those living in the Metropolitan Area; b) to present the nutritional status of the urban population,

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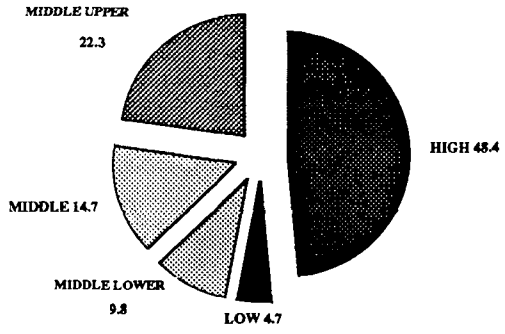
mainly that of preschoolers, and c) to indicate the main conditioning factors of nutrition in the population of the Metropolitan Area.

SOCIOENOMIC SITUATION OF THE URBAN POPULATION

In spite of the fact that the Metropolitan Area of San Jose presents as an average the best economic and social conditions of the country, it also exhibits important differences in the living conditions among families.

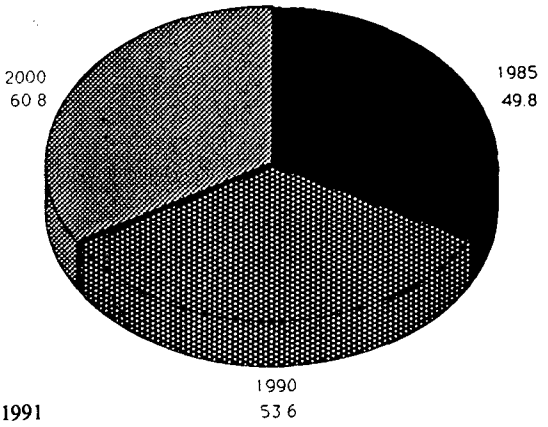
According to figures given by the Ministry of Planning (MIDEPLAN), during 1991, 34% of families of this area did not satisfy their basic needs, and 15,239 other families were living in acute poverty. In this regard, Figure 1 shows that 20% of families concentrate 48.4% of the national income whereas other 20% of families only receive 5% of the national income. Although poverty is spread among the Metropolitan Area, there are concentrations of poor families in certain neighbourhoods such as those located to the south of the capital (MIDEPLAN, 1991).

FIGURE 1
WEALTH DISTRIBUTION IN COSTA RICA, 1988
EXPRESSED AS A PERCENTAGE OF TOTAL WEALTH



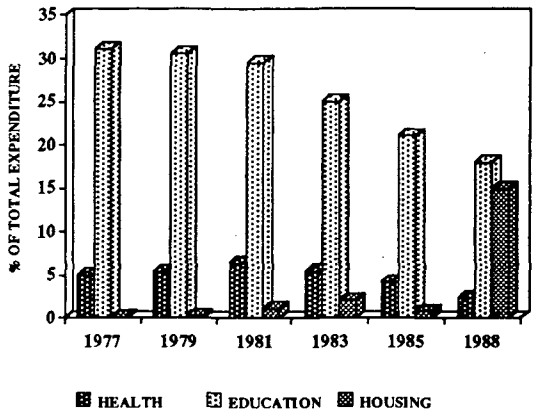
Dirección General de Estadística y Censos.
Encuesta Nacional de Ingresos y Gastos, 1988.

FIGURE 2
PROPORTIONAL INCREASE OF THE URBAN POPULATION IN COSTA RICA



PAHO, 1991

FIGURE 3
GOVERNMENT EXPENDITURE ON HEALTH, EDUCATION AND HOUSING IN COSTA RICA, 1977-88

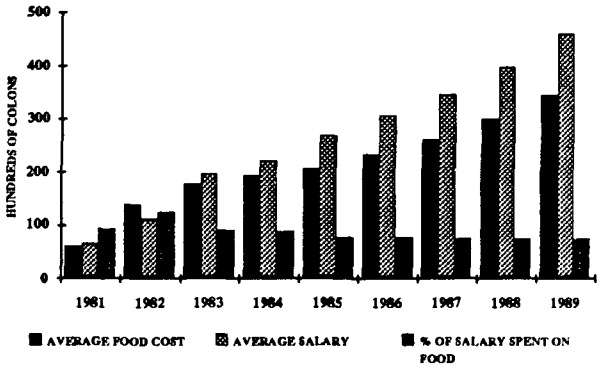


Mideplan, 1985 & O.P.S., 1991

This is an alarming situation since it is expected that by the year 2000 the urban dwellers will represent 60% of the total population (Figure 2). In contrast, the national budget destined to cover services such as drinking water, electricity, rubbish collection, public transportation and others has been gradually reduced since the 80s. For example, in Figure 3 it is noticeable that government expenditure on health and education has decreased whereas expenditure on housing is increasing, mainly due to the strong demand of homeless families.

The cost of food in relation to purchasing power is an economic indicator that allows us to suggest nutritional and health consequences for poor families. In this respect, Figure 4 shows that a family depending on a minimum salary would need 75% of that salary to cover the cost of food. This situation would classify such families as poor. In addition, Table 1 shows the results of a survey carried out during 1981-82 among urban poor families which showed that only those whose breadwinner had a permanent job were able to cover the cost of food.

FIGURE 4
PROGRESSION OF THE COST, OF THE BASIC FOOD BASKET, 1981-89, COSTA RICA



Cáceres y Murillo, Cadesca, 1990

TABLE 1
HOUSEHOLD EXPENDITURE ON FOOD, COSTA RICA, 1981-82.

Type of employment of the head of the family	Average family income*	% of income*** spent on food colons/month
Permanent workers:		
Salaried	5397**	49
Self-employed	4833	72
Owner	10948	31
Temporary workers:		
Contract labourets	3751	53
Independent workers	2556	41
Dependent workers	3283	57

* The average national salary in 1982 was 2957 colons/month.
** 60 colones = 1 U.S. dollar during the survey period.
*** The cost of the Costa Rica food basket for a family of five was 2460 colons/month in 1981-82.

Source: Murillo , S., 1984.

HEALTH AND NUTRITIONAL SITUATION OF THE URBAN POPULATION

Sociodemographic factors Table 2 shows that for the first half of this century, mortality strongly contributed to the behavioural growth of the population. In contrast, from 1950 onwards, birth rates have been the determinant variable on population growth (Sosa, 1991).

TABLE 2
MORTALITY RATES IN COSTA RICA

	Deaths/1000 Population		
Category	1970	1980	1990
Total mortality	6.6	4.1	3.9
Infant mortality	61.5	19.1	14.0
Mortality 1-4 yr	4.4	0.9	0.8
Mortality 5-14 yr	0.9	0.5	0.3

Source: Mahs, 1982 % P.A.H.O., 1991.

As can be observed from this table, infant mortality has particularly affected the general mortality rate of the population. However, from the 1960s, infant mortality rates have shown a continuous reduction, mainly due to changes in the causes of death pattern, (Table 3).

TABLE 3
CHANGES IN THE PRINCIPAL CAUSES OF DEATH AT THE NATIONAL CHILDREN'S HOSPITAL

	1970	1980	1990
1st	Diarrhoeal Disease	Perinatal illnesses	Idem.
2nd	Pneumonia	Congenital malformations	Idem.
3rd	Septicaemia Transmittable	Pneumonia	diseases
4th	Meningitis	Trauma	Trauma
5th	Immaturity	Malignancies	Idem.

Source: Mohs, 1982& P.A.H.O.

The composition of the infant mortality rate has also suffered variations through last decades, i.e. in 1970, the infant mortality rate of 61.5 per thousand live births was composed of a neonatal rate of 22/1000 and of a postneonatal rate of 39.5/1000 live births; whereas, in 1988, these figures were composed as follows: infant mortality rate of 14.1/1000 live births given by a neonatal rate of 9.3/1000 and of a postneonatal rate of 4.8/1000 live births (Table 4).

The above-mentioned situation added up to a decreased birth rate, which has affected the pyramid structure of the

TABLE 4
INFANT MORTALITY RATE PER 1000
1970-1988, COSTA RICA

Year	Neonatal	Postneonatal	Infantile
1970	22.0	39.5	61.5
1975	17.7	19.4	37.1
1980	11.2	7.9	19.1
1988	9.3	4.8	14.1

Source: Mohs, 1982 % PAHO, 1991.

population. Thus, by 1990, 13.1% of the population were children under 4 years of age and, according to projections, it is estimated that by the year 2000 this age group will only represent 11.5% of the inhabitants.

The principal causes of death among the adult population are similar to those for developed countries such as cardiovascular diseases, tumours and accidents.

Intestinal parasites. The high prevalence of endemic infectious parasitic diseases is one of the main health problems in the public health of developing countries. In general terms, many countries of the world have been successful in reducing the percentage of people suffering from endemic parasites. However, recent surveys have revealed that the percentage of infected people living in developing countries still remains unchanged. Most of these people are located in the slum areas of cities (WHO, 1990; Kossof & Hernandez,et.al., 1989).

Like most of the Latin American nations, Costa Rica has been more successful in tackling rural health problems than those in poverty stricken urban areas (Kossof & Hernandez, et.al., 1989; Murillo, 1990).

A study carried out in 1987 by Hernandez and co workers in families of a slum area and families from the middle income group, confirmed the hypothesis that inadequate hygienic conditions favour the transmission of intestinal parasites.

Results from the above-mentioned study are shown in Table 5 where it can be observed that a high prevalence of A. lumbricoides, T. trichiura and H.nana exists in slum families. Ninety four percent of families belonging to the middle income group were found free from those parasites, whereas 59% of families from the slum were infested. This difference was found to be statistically significant.

Furthermore, the same study indicated that the infestation was higher in people between the ages of 1 to 14 years. This situation suggested that inadequate sewage disposal and poor sanitary facilities contributed to a higher prevalence of parasitism.

Another study undertaken in a sample of preschool children during 1987, revealed that 85% of them were positive for parasites. Similar percentages were reported earlier in 1963 in a study done by Kotcher among 4 years old children of different towns of Costa Rica, Table 6 (Reyes, et. al., 1987).

The study made by Reyes (1987), demonstrated that the prevalence of A. lumbricoides, T. trichiura and E. histolytica, correlated with the availability of drinking water and the type of sewage disposal ($p< 0.05$).

Supporting these findings, Murillo, 1990, found during an observation period of 12 months, a high prevalence of diarrhoea

TABLE 5
PREVALENCE OF INTESTINAL PARASITES IN A SLUM AREA AND IN HATILLO (MIDDLE CLASS COMMUNITY) (%), METROPOLITAN AREA, COSTA RICA, 1987

Parasite	Children (1-14 years)		Adults (15 years or greater)	
	Slum area	Hatillo	Slum area	Hatillo
Ascaris	38 (21.0)	4 (6)	16 (8.9)	10 (8.6)
Tricuris	28 (15.5)	0	23 (12.8)	1 (0.8)
Hymenolepis	16 (8.8)	0	6 (3.4)	0
n	181	67	179	117

Source: Hernández, F. 1989.

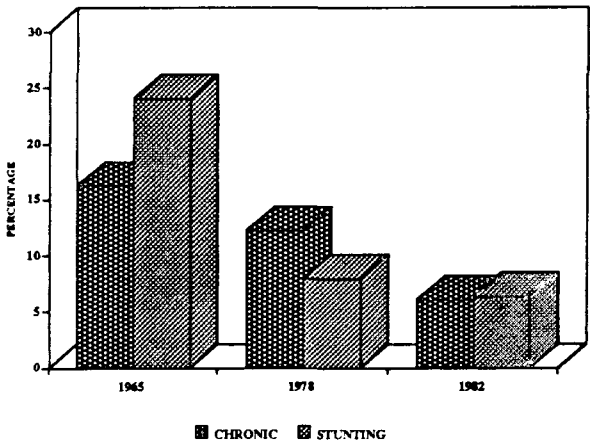
TABLE 6

PREVALENCE OF INTESTINAL PARASITES IN PRESCHOOL CHILDREN ATTENDING DAY CARE CENTRES IN THE METROPOLITAN AREA OF COSTA RICA, 1986

Parasites	No.	%
A. *lumbricoides*	123	(25)
T. *trichiurus*	168	(37)
E. *histolytica*	83	(16)
L. *intestinalis*	234	(47)
Total	500	

Source: reyes, L. et. al. 1987.

FIGURE 5
PREVALENCE OF UNDERNUTRITION IN PRESCHOOL CHILDREN
1965-82, COSTA RICA



Encuesta Nacional de Nutrición

in a sample of children under three years of age from poor neighbourhoods in the Metropolitan Area.

As was expressed by Reyes, 1987 "it could be concluded that although there have been achievements in health in Costa Rica, the deterioration of socioeconomic conditions of some families and the poor environmental conditions in which they live, are reflected in such high indicators of parasites lately found in people in the Metropolitan Area".

Health and nutrition The study of the nutritional status of children under 6 years of age has been the objective of several surveys undertaken in Costa Rica during the last three decades. Figure 5 shows a reduction in the prevalence of chronic malnutrition (defined as < 2 S.D. a way from the median of the NCHS reference growth pattern for the relationship weight age) and of stunting (defined as < 2 S.D. from the median of the NHCS reference growth pattern for height-age) in the preschool population of the country. Because these figures are mean values at the national level, they fail to reflect the nutritional situation of children according to urbanisation or socioeconomic class.

As has been stated by others (Lipton, 1975; Austin, 1982; Schurch and Favre, 1985; Gross and Monteiro, 1989), the study of nutritional problems in urban families coincides with the adversity of socioeconomic and cultural factors which promote poverty and malnutrition.

This relationship between poverty and malnutrition has also been described for Costa Rican urban areas. A study carried out by Murillo in 1984 in a subsample of children under 6 years of age from the poorest neighbourhoods of the Metropolitan Area, indicated that families belonging to the lowest income group had the majority of undernourished children. Thirty percent of surveyed children presented growth retardation which proved to be significantly related to environmental conditions rather than to genetic factors.

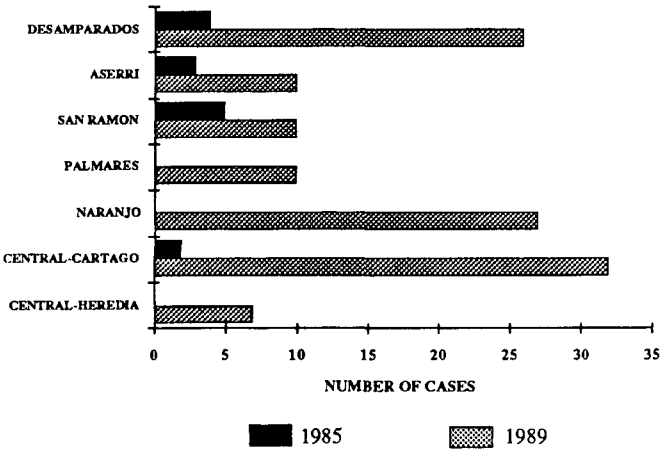
Results from the same study suggested that differences in height between children from different social classes occurred after the first year of life, probably as a result of negative environmental conditions and inadequate upbringing. Furthermore, it was found that differences in height were more pronounced than differences in weight between the study children according to social class (Murillo, 1984; 1987).

A longitudinal study undertaken among children living in the Metropolitan Area indicated that infants were completely weaned at three months of age, and energy intake was found to be the limiting factor in infants' and children's diets, particularly of those older than 11 months. This same study showed that 73% of children from the poorest families were below the 50th centile of height for age.

There exists some evidence of nutritional status deterioration among the infant population from urban areas during the last three years as a consequence of the economic crisis and as a result of the structural adjustment measures adopted by the government since 1986. The budget for primary health care programmes has been reduced affecting the quality and coverage of services. In addition, these programmes have been orientated towards the rural rather than the urban population, (Figure 6).

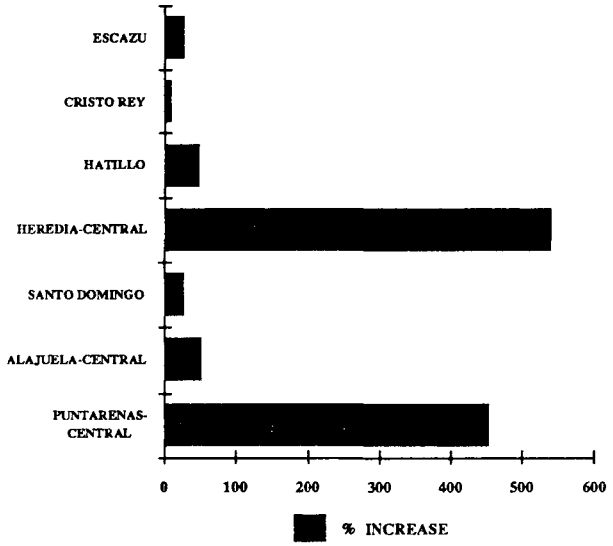
A recent report from the Ministry of Health points out an increase in the number of cases of severe malnutrition in some districts (cantones) during 1985-89. Another report from the same Ministry, indicated an increase in severe malnutrition cases among children under 6 years of age from urban districts (central) in the Provinces of Heredia, Puntarenas and San Jose, (Figure 7).

FIGURE 6
INCREASE IN CASES OF SEVERE UNDERNUTRITION IN SOME URBAN DISTRICTS, COSTA RICA, 1985-1989



Novigrodt, R. Proban. Ministerio de Salud, 1991

FIGURE 7
INCREASE (%) IN SEVERE UNDERNUTRITION ACCORDING TO THE PRIMARY HEALTH CARE PROGRAMME, COSTA RICA 1985-89

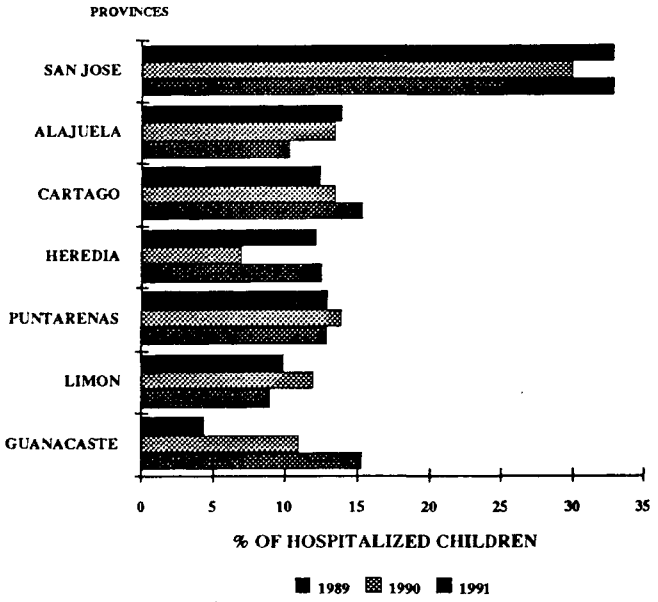


Novigrodt, R. Proban. Ministerio de Salud, 1991

This situation coincides with data from INCIENSA (the only place in the country specialising in the treatment of severe malnutrition) in relation to the number of hospitalised children with a diagnosis of severe malnutrition for the period 1989-1991. In this regard, Figure 8 shows the geographic distribution of these children. It is worth noting that 33% of total cases came from urban areas of the country, mainly from San Jose province where the Metropolitan Area is located.

Another important finding regarding the nutrition of urban dwellers, concerns the average intake of calories and proteins by the population which was lower than rural ones according to the last national estimated consumption survey of 1989, (Figures 9 and 10).

FIGURE 8
GEOGRAPHIC DISTRIBUTION OF SEVERE UNDERNOURISHED CHILDREN HOSPITALIZED AT "THE INCIENSA", HOSPITAL, 89-90, COSTA RICA



Alfaro, F. Inciensa, 1992

CONCLUDING REMARKS

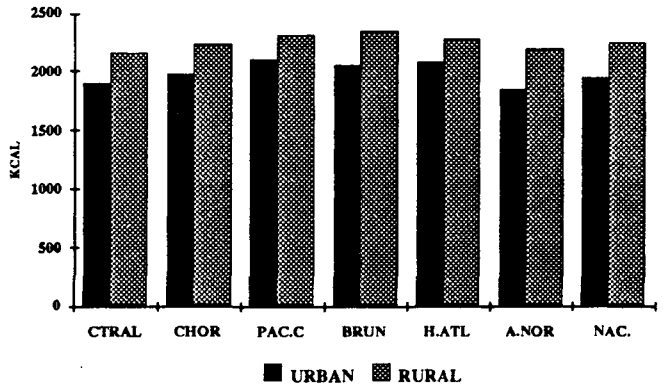
The health and nutritional status of a given population is usually determined by social and economic factors. These factors not only condition the environment where people live but also condition food habits, access to food and economic production of the individual. Thus, it is necessary to analyse the enviroment where groups live in order to describe their nutritional status (Cáceres and Murillo, 1990).

Although Costa Rica is lacking a multicausal analysis of the health and nutritional status of its urban population this paper presented data from the few available studies and reports to which we had access.

This presentation suggests that both research and recognition of nutritional problems affecting Costa Rican urban population have been ignored.

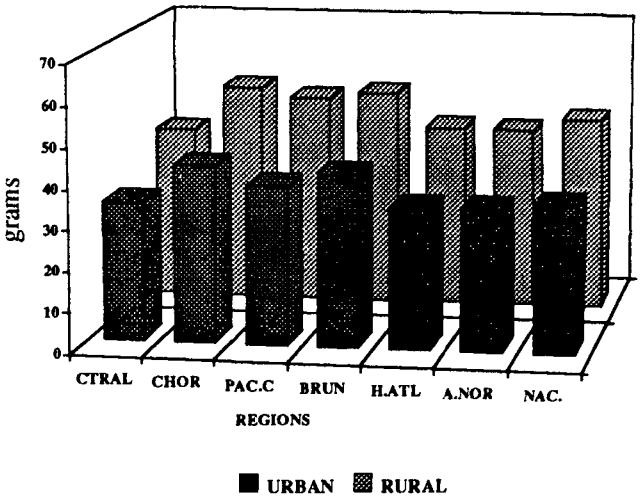
The high prevalence of intestinal parasitism and the high

FIGURE 9
ENERGY CONSUMPTION PER CAPITA ACCORDING TO URBANISATION, IN DESIGNATED REGIONS, COSTA RICA, 1989



Encuesta Nacional de Consumo Aparente de Alimentos, 1989

FIGURE 10
PROTEIN INTAKE ACCORDING TO DEGREE, OF URBANISATION, COSTA RICA, 1989



Encuesta Nacional de Consumo Aparente de Alimentos, 1989

rate of morbidity episodes affecting preschoolers of the Metropolitan Area, indicate the need for adequate basic public services addressed to poverty stricken urban areas. In addition, it is necesarry to provide nutrition education to help solve some of the current health problems.

It is worrying to note a deterioration process taking place regarding the nutrition of children under 6 years of age. This result could be one of the social costs brought about by structural adjustment measures adopted by the government since 1986. Malnutrition is a fact in Costa Rica. According to information displayed in this paper, low income families are the ones which present health and malnutrition problems.

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