

NUTRITION SITUATION IN BRAZZAVILLE (CONGO) HAS WORSENERD OVER THE LAST TEN YEARS

Y. Martin-Prével^{1,2}, P. Traissac¹, J.P. Massamba^{2,3}, D. Garnier¹, G.M. Adoua-Oyila⁴, and F. Delpeuch¹
 (1) ORSTOM, Nutrition Unit, Montpellier, France (2) DGRST, Nutrition Unit, Brazzaville, Congo (3) EPRAN, Brazzaville, Congo (4) BEE, Brazzaville, Congo

ABSTRACT

In 1986, 1991 and 1996, three anthropometric cross-sectional surveys were carried out in Brazzaville, the capital city of the Congo, on representative samples of children < 6 y. old (n = 2,265, 2,345 and 2,000 respectively) and their mothers. In addition all other members of the households were also investigated in 1991 and 1996. Comparisons between years were adjusted for age, district and, when necessary, sex. Prevalence of wasting (weight-for-height < -2 z-scores) among children showed a significant increase over the three surveys (2.9%, 3.9%, 4.6% - OR 96 vs 86 = 1.72, p < 0.001). The prevalence of low Body Mass Index (BMI < 18.5 kg/m²) among mothers also significantly increased (8.4 %, 10.5 %, 14.2 % - OR 96 vs 86 = 1.89, p < 0.001). Paradoxically the proportion of stunted children (height-for-age < -2 z-scores) first decreased from 1986 to 1991 (13.4% to 10.7% - OR 91 vs 86 = 0.75, p = 0.013). But after 1991 it rose sharply to reach its highest level in 1996 (17.0% - OR 96 vs 86 = 1.24, p = 0.013). These results reflect a global deterioration of the nutritional situation. Moreover, similar trends among the other household members were observed from 1991 to 1996: increase of low BMI prevalence among adults (women, OR = 1.42, p < 0.001; men, OR = 1.49, p = 0.001); increase of low BMI for age among adolescents, especially males (OR = 1.75, p < 0.001), increase of stunting in school children (9.6% to 14.5% - OR = 1.54, p < 0.01).

Fonds Documentaire IRD
 Cote: B x 21787 Ex: 1

INTRODUCTION

The Congo is a small central African country with a population of about 2,500,000 (1996 estimate). Until the mid 80's the Congo enjoyed a relative prosperity. Unfortunately, a strong dependence on oil exports (40% of GNP) backfired when oil prices started to drop in 1983. The slump in GNP and a costly debt servicing forced the government to implement a first structural adjustment program in 1986. This resulted in a sharp increase in the unemployment rate and drastic cuts in health care and education budgets.

In The Congo, nearly 60 % of the population lives in the main cities, with about 1,000,000 in the capital city, Brazzaville. So, to assess the effect of the economic crisis and of the adjustment on the nutritional status of population in urban environment, a first survey was carried out in Brazzaville in 1986.

Two further surveys were undertaken in 1991 and 1996, by the same team and using the same methodology, to follow up the nutritional situation as the economic crisis and the adjustment programs persist.

METHODS

The study zone is an urban transect running from the central to the peripheral area of Brazzaville. In 1986 the sampling frame was based on a list of city blocks from the 1984 national census. Blocks were randomly selected to achieve a sample size of approximately 2,400 children < 6 y. and their mothers (i.e. 100 children per quarterly age group). In 1991 and 1996, at the same time of year, the same blocks were surveyed, including children < 6 y. and their mothers but also the other members of the household.

Anthropometric measurements were taken according to standardized procedures. Information on age of children was obtained from a written birth record or similar document. For children < 10 y. the weight-for-height and height-for-age indices are presented as deviations in Z-scores from the CDC/WHO reference population mean value. The <-2 Z-scores cut-off point defines wasting and stunting. Body mass index (BMI) is used to assess the nutritional status of adults and adolescents. For adults, underweight is defined as BMI < 18.5 kg/m² and overweight as > 25 kg/m².

For children, comparisons between years were adjusted for age, district, and sex when necessary. The type I error was set at 0.05 for all analyses.

RESULTS

Over the three surveys (1986-1991-1996), the prevalence of wasting among children < 6 y., and the prevalence of underweight among mothers, significantly increased, respectively from 2.9 to 4.6 % (p < 0.001) and from 8.4 to 14.2 % (p < 0.001) (see Table 1). Over the same time, the prevalence of stunting among children < 6 y. first decreased (13.4 to 10.7 % from 1986 to 1991) but then sharply increased to 17.0 % in 1996 (OR 96/86 = 1.2, p=0.01). The mean indices, for children (weight-for-height and height-for-age) and for mothers as well (BMI), displayed the same trends as the prevalences over the three surveys (Fig. 1 and Fig. 2).

From 1991 to 1996, among children 6-9 y., the prevalence of stunting sharply increased, from 9.5 to 14.6 % (p < 0.001). However, mean height-for-age, prevalence of wasting and mean weight-for-height index did not vary significantly (Table 2 and Fig. 1). In adults, over the same time (1991 to 1996), the prevalence of underweight increased markedly, among both men (10.6 to 15.3 %) and women (11.3 to 15.4 %), while the prevalence of overweight also decreased significantly in both. Subsequently, the mean BMIs sharply decreased (Fig. 2). In addition, underweight also increased among adolescents, especially males (results not shown).

Table 1 - Evolution of Prevalences among Children < 6 y. and Mothers 1986 - 1991 - 1996

CHILDREN < 6 y.	WASTING (Weight-for-Height < -2 Z-scores)				STUNTING (Height-for-Age < -2 Z-scores)			
	n	%	OR ¹	CI ²	n	%	OR ¹	CI ²
	1986	2285	2.9	1	-	2233	13.4	1
1991	2345	3.9	1.4	1.0-2.0	2299	10.7	0.7	0.6-0.9
1996	1994	4.6	1.7	1.2-2.4	2000	17.0	1.2	1.1-1.5

MOTHERS	UNDERWEIGHT (BMI < 18.5 kg/m ²)				OVERWEIGHT (BMI > 25 kg/m ²)			
	n	%	OR ¹	CI ²	n	%	OR ¹	CI ²
	1986	984	8.4	1	-	984	24.3	1
1991	1356	10.5	1.3	1.0-1.7	1356	28.7	1.3	1.0-1.5
1996	1250	14.2	1.9	1.4-2.5	1250	22.0	0.9	0.7-1.1

¹ OR = Odds Ratio, using 1986 as reference, adjusted on age, district and sex when necessary
² CI = Confidence Interval (95%) for the Odds Ratio

Figure 1 - Mean Indices of Children

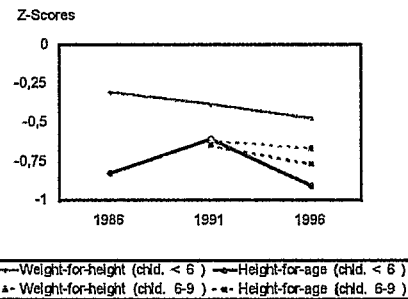


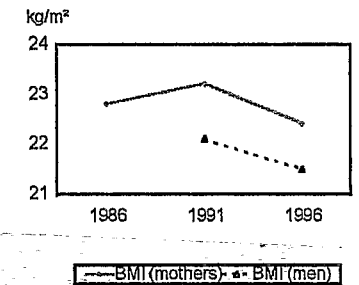
Table 2 - Evolution of Prevalences among Children 6-9 y. and Adults 1991 - 1996

CHILDREN 6-9 y.	WASTING (Weight-for-Height < -2)				STUNTING (Height-for-Age < -2)			
	n	%	OR ¹	CI ²	n	%	OR ¹	CI ²
	1991	858	4.8	1	-	809	9.5	1
1996	826	3.3	0.7	0.4-1.1	849	14.6	1.8	1.2-2.1

ADULTS	UNDERWEIGHT (BMI < 18.5)				OVERWEIGHT (BMI > 25)			
	n	%	OR ¹	CI ²	n	%	OR ¹	CI ²
	Men							
1991	1231	10.6	1	-	1231	16.7	1	-
1996	1351	15.3	1.5	1.2-1.9	1351	13.6	0.8	0.6-1.0
Women								
1991	1899	11.3	1	-	1899	29.0	1	-
1996	1888	15.4	1.4	1.2-1.7	1888	21.7	0.7	0.6-0.8

¹ OR = Odds Ratio, using 1991 as reference, adjusted on age, district and sex when necessary
² CI = Confidence Interval (95%) for the Odds Ratio

Figure 2 - Mean BMI of Adults



CONCLUSION

The evolution of prevalences and mean indices showed a global deterioration of the nutritional status in Brazzaville over the last ten years. According to almost all the indicators, the situation worsened after 1991 for all age and gender groups.

Likely explanations (basic causes) are:

- a general deterioration of the economic situation in sub-saharian Africa, and the following adjustments, including the devaluation of the currency (Franc CFA) in January 1994;
- a social and political instability in the Congo, following the transition to democracy, from the 1992 National Conference to the December 1993 fightings (and most recently the June 1997 civil war).



Laboratoire de Nutrition Tropicale

WHO Collaborating Centre for Nutrition

