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### Methodological reflections on food insecurity, nutritional status, and poverty

The opening sentence to the article by Schlüssel et al. expresses a classical debate in the field of nutrition, referring to the interrelations between poverty, nutritional status, and food insecurity. I will analyze the following in relation to the apparent paradox highlighted by the authors: (a) the indicators traditionally used in the analysis of the phenomena studied and (b) the possible explanations for the scenario described.

The lack of consensus on the magnitude of food insecurity, hunger, and related processes has been widespread for several decades in Brazilian academic institutions and governments and especially affects the methodologies used and correlations established between the “food” and “nutritional” dimensions. The mass media has become involved in the debate at different stages. Publication of the Hunger Map by the Institute of Applied Economic Research (IPEA) in 1993 sparked doubts as to the size of the problem; in 2004, publication of data from the *Family Budget Survey* (POF) 2002-2003 showed the severity of the obesity problem and spawned uncertainties concerning the Zero Hunger Program. Countless headlines had already pointed to the apparent paradox highlighted by Schlüssel et al., “*the fat and malnourished*” – a debate with erroneous premises<sup>1</sup>. At stake were the conceptual and methodological options used.

Since this paradox rekindles discussions on methods, it is appropriate to reclaim a historical

reflection on the reach of the indicators hunger/food scarcity, poverty/indigence, which can contribute to the analysis of the *Brazilian Food Insecurity Scale* (EBIA).

The indicators traditionally used to characterize poverty and hunger have been questioned due to their low specificity, for failing to distinguish between food and calorie needs, between indigence and hunger, and due to their limits in grasping the food dimension<sup>2</sup>. Anthropometry has already been used to measure hunger, although one cannot claim that individuals with anthropometric deficits are necessarily going hungry, or vice-versa. The method widely used to calculate the poverty line has also been used for this same purpose, since it is based on the per capita family income needed to purchase the “basic food basket” capable of meeting nutritional needs. This calculation usually covers only calorie needs, since the *National Family Spending Study* (ENDEF) 1974/1975, and the POF 1987-1988 indicated that a diet capable of guaranteeing calorie requirements would also meet the needs for other nutrients<sup>3</sup>. The current Brazilian profile of eating practices probably fails to confirm this assumption, given the growing intake of processed foods (energy-dense and micronutrient-poor). This profile contributes to the coexistence of obesity, anemia, and other deficiency-based diseases in the population and in individuals. Given the limited reach of these indicators, the EBIA became part of the scope of methods used in nationwide surveys, since it allows gradations, grasping the families’ processes and experiences.

The questions in the EBIA refer to food access problems, particularly those caused by income insufficiency. Thus, income is still an important component of the indicator, and it is important to know to what extent this essential characteristic is neutralized when the prevalence ratios of overweight/obesity according to food insecurity level are adjusted by income, or when they are adjusted by income as a continuous versus categorical variable. In addition, this is a correlation between a household measure and individually measured anthropometric data. The possible mediations and interrelations between these distinct analytical dimensions should be considered.

Relations between food insecurity, obesity, and poverty are acknowledged by Schlüssel et al., although adjustment was made for income. One of the possible explanations presented by the authors for the apparent paradox is that poorer families purchase foods with higher energy density. This explanation leads to the second order of questions discussed here, namely factors that condition the scenario of obesity in

poverty, especially in women, already evident in Brazil.

The subjective feeling of food deprivation and inadequacy, detected by the EBIA scale, is an important element for grasping the relationship found in the study between moderate forms of food insecurity and obesity in women. The experience of being concerned over lack of resources is widespread in the Brazilian population. An analysis of the data from the POF 2002-2003 that measured the families' difficulty in covering their expenses by the end of the month indicated that even in the highest income bracket, 54.5% of interviewees reported such difficulties and that only 8.5% consumed their favorite foods<sup>1</sup>. Thus, even through compensatory psychosocial mechanisms, variations in the availability of resources over the course of the month can lead to a food intake profile that simultaneously includes deprivations (objective and subjective) and excesses (quantitative and/or qualitative). Families in situations of deprivation tend to optimize their food choices based on the best combination of cost, satiety, and taste. Processed products that are both rich in sugar and fat and affordable fit neatly into this profile. Thus, a study among users of the Bolsa Família Program in Brazil indicated that these were the products with the highest self-reported consumption among families in situations of food insecurity and that were most dependent on income transfers from the program<sup>4</sup>.

Schlüssel et al. found distinct profiles of association between food insecurity and overweight/obesity for adult women and adolescents, corroborating Townsend et al.<sup>5</sup>, who indicated an association between moderate food insecurity (involuntary and temporary) and overweight in adult women. In addition to the factors cited by Schlüssel et al., other aspects may be relevant to the life course approach. Children that suffer nutritional stress early in life may be more metabolically efficient. Reduced food intake causes a reduction in both the baseline metabolic rate, through a process of biological adaptation, and in physical activity. Thus, energy expenditure is reduced, generating a positive energy balance, but not necessarily with adequate food consumption<sup>6</sup>.

Finally, the concept of food insecurity is also used to distinguish between situations of "insufficiency" and "insecurity" which implies a concern over running out of food or a limitation on access to foods in socially acceptable ways<sup>5</sup>. The subjective and relative experience of food insecurity reflects socially constructed eating practices. The questions about healthy, varied, and sufficient eating on the EBIA scale are thus answered as

a function of differentiated life contexts, which thus occupy an important place in the analysis of this apparently paradoxical scenario.

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