

The Diets of America's Children

Influence of Dining Out, Household Characteristics, and Nutrition Knowledge

Biing-Hwan Lin
Joanne Guthrie
James R. Blaylock

Introduction

The Economic Research Service places a yearly price tag of \$250 billion in medical costs and lost productivity associated with seven health conditions linked to dietary behavior. These enormous costs are one reason that the U.S. Department of Agriculture and private and public partners place a high priority on improving the diet of the public. American diets have a long way to go before reaching generally accepted recommendations on total fat, saturated fat, sodium, complex carbohydrates, and fiber.

American children, like their elders, are dining out more often than ever. As children eat away from home more frequently and at a variety of establishments, parents may lose some control over the quality of their offsprings' diets. Some people also believe that nutritional guidance should start early in life for the greatest long-term health impacts. The development of effective dietary messages will gain from knowing more about the implications of current eating choices and the feasibility of prescribed changes.

We address several questions surrounding children's eating habits. First, do children's intake of food calories, total fat, saturated fat, cholesterol, fiber, calcium, iron, and sodium vary by eating occasion (morning, midday, and evening meals and snacks) as well as by whether the foods were prepared at home or away? Second, does the source of food away (fast food, schools, and restaurants) influence the nutritional content of meals? Third, how do nutrient intakes vary by the children's social, economic, and

demographic characteristics as well as their meal planners' (typically a female in the household) diet and health-related knowledge? The analysis is based on a comparison of average values of selected nutrients computed from a large, nationally representative sample of individuals.

The severity of problems in children's diets is documented in the *Third Report on Nutrition Monitoring in the United States* (IBNMRR, 1995). The U.S. Department of Health and Human Services (1989) report, *Healthy People 2000, National Health Promotion and Disease Prevention Objectives*, lists goals for improving the nutritional status of children and adolescents, including reducing obesity, growth retardation, and dietary fat intake; increasing calcium and iron intakes; enhancing nutrition education from preschool through grade 12; and making school menus consistent with nutrition principles in the *Dietary Guidelines for Americans* (USDA, 1995). This report will help document the influence of eating away from home on the nutrient intake and diet quality of children.

One of our principal findings is that food consumed away from home has a higher ratio of fat to calories (fat density), and lower fiber and calcium densities than foods prepared at home. School meals were relatively rich in fiber and calcium and relatively low in sodium compared with other away-from-home foods. These findings apply to all age and sex groups and highlight the importance of expanding information about the nutritional content of away-from-home foods, which is limited. This will become a larger issue as people dine out more often.

Data

Data from USDA's 1989-91 Continuing Survey of Food Intakes by Individuals (CSFII) and the companion Diet and Health Knowledge Survey (DHKS) provided the basis for this report. The 1989-91 CSFII/DHKS surveys were implemented by USDA's Human Nutrition Information Service (HNIS). Two independent samples of households—the "basic" or all-income sample and low-income sample—were selected using a multistage, stratified selection procedure targeted at private households in the 48 contiguous States. In the 1989-91 surveys, 23,142 housing units were selected, which after screening resulted in 8,443 eligible households, of which 6,718 (79.6 percent) participated.

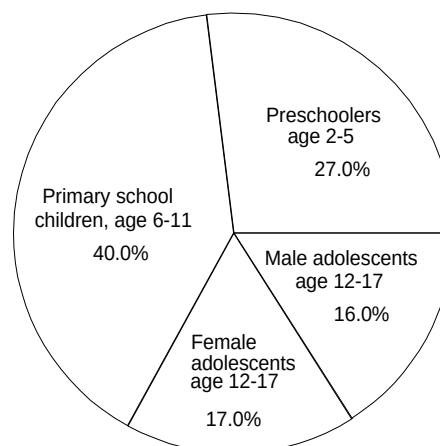
The CSFII survey collects information on what, when, where, and how much Americans eat. Each CSFII participant was asked to provide 3 consecutive days of dietary data. The first day's data were collected in an inhome interview using a 1-day dietary recall. The second and third days' data were collected using a self-administered 2-day dietary record. Social, economic, and demographic characteristics of survey participants are also included in the CSFII. There were 17,721 individuals living in the 6,718 participating households; 15,192 (85.7 percent) completed the 1-day recall and 11,912 (67.2 percent) completed both the 1-day recall and 2-day record. The data were weighted using USDA-provided weights that adjust for the survey's oversampling of low-income households and differing response rates among population subgroups. These weights provide results more representative of the U.S. population.

In the CSFII survey, each food item eaten was recorded using a coding system that contains about 6,700 food codes. USDA's Agricultural Research Service (ARS) maintains a database with the nutrient composition for each food code. The amount of nutrients in each food was calculated by multiplying the amount of food reported eaten by its nutritive value.

One DHKS respondent, usually the household's main meal planner, was contacted by telephone about 6 weeks after collection of the dietary data and asked to answer questions about knowledge of and attitudes toward diet, health, and food safety issues. Among the 6,718 participating households, 5,730 (85.3 percent) completed the DHKS.

Figure 1

Distribution of children by age and gender



Compiled by USDA/ERS from CSFII 1989-91, 3-day weighted averages.

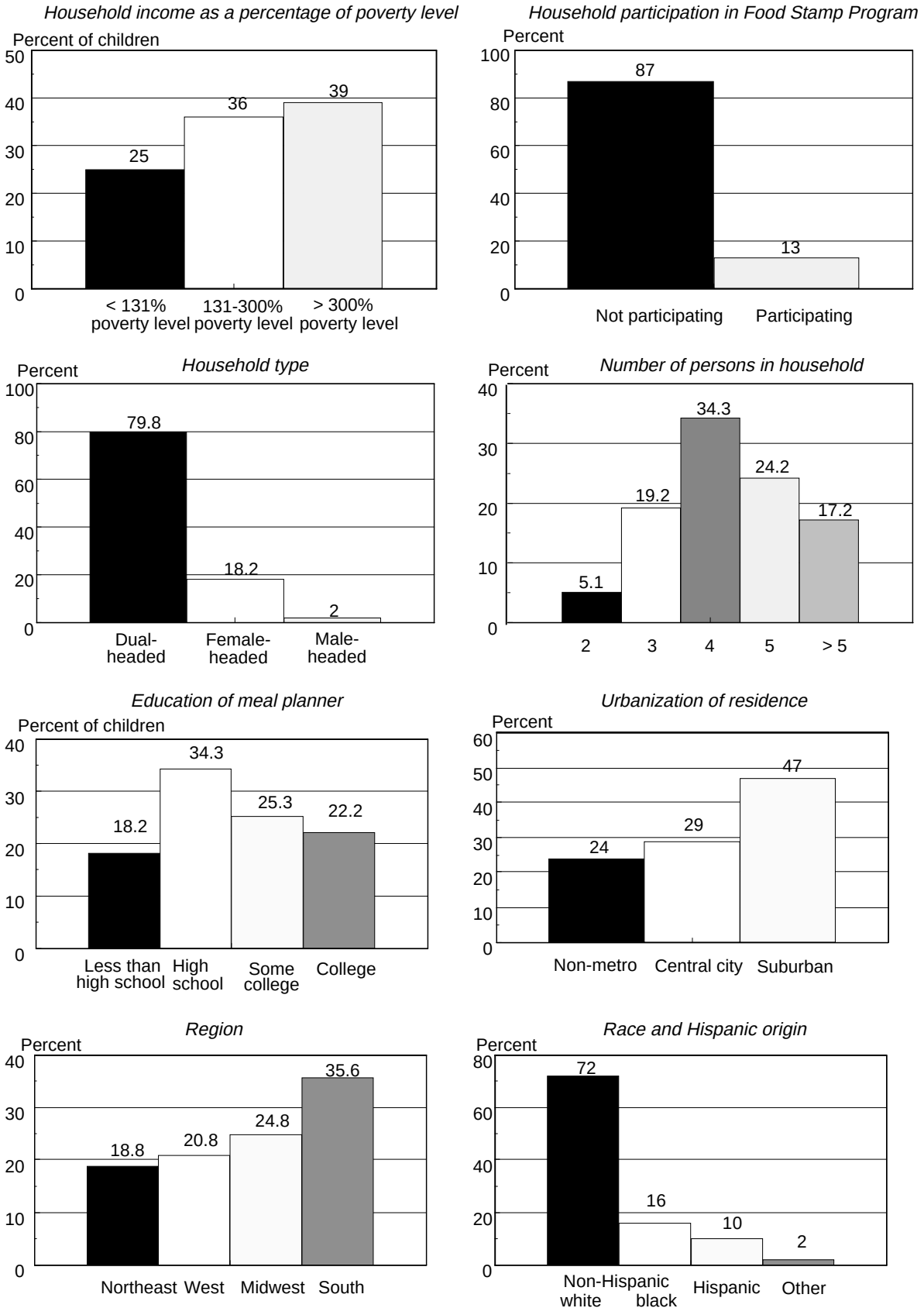
The surveys have been used to describe food consumption behavior and to assess the nutritional content of diets. Results from the surveys have major implications for policies relating to food production and marketing, food safety, food assistance, and nutrition education. The surveys are a major component of the National Nutrition Monitoring and Related Research Program, a set of related Federal activities intended to provide regular information on the nutritional status of the U.S. population.

The focus of this report is on children and adolescents between the ages of 2 and 17 (hereafter called children), who reported (intakes of children under 12 were provided by their meal planners/preparers) 3-day intake information. Children in this study are grouped into four age/gender categories: children age 2-5 (preschoolers), children age 6-11 (primary school children), females age 12-17 (female adolescents), and males age 12-17 (male adolescents). In total, 3,010 children were included in this analysis, representing more than 57 million children over 3 years. Among them, 27 percent were preschoolers, 40 percent primary school children, 17 percent female adolescents, and 16 percent male adolescents (fig. 1).

Household characteristics include household income, participation in the Food Stamp Program, household type, household size, education of children's meal planners, race and Hispanic origin, region, and urbanization of residence (fig. 2). Children's intakes of food energy and selected nutrients per day are tabulated according to their meal planners' diet and health-related information: whether the meal planner

Figure 2

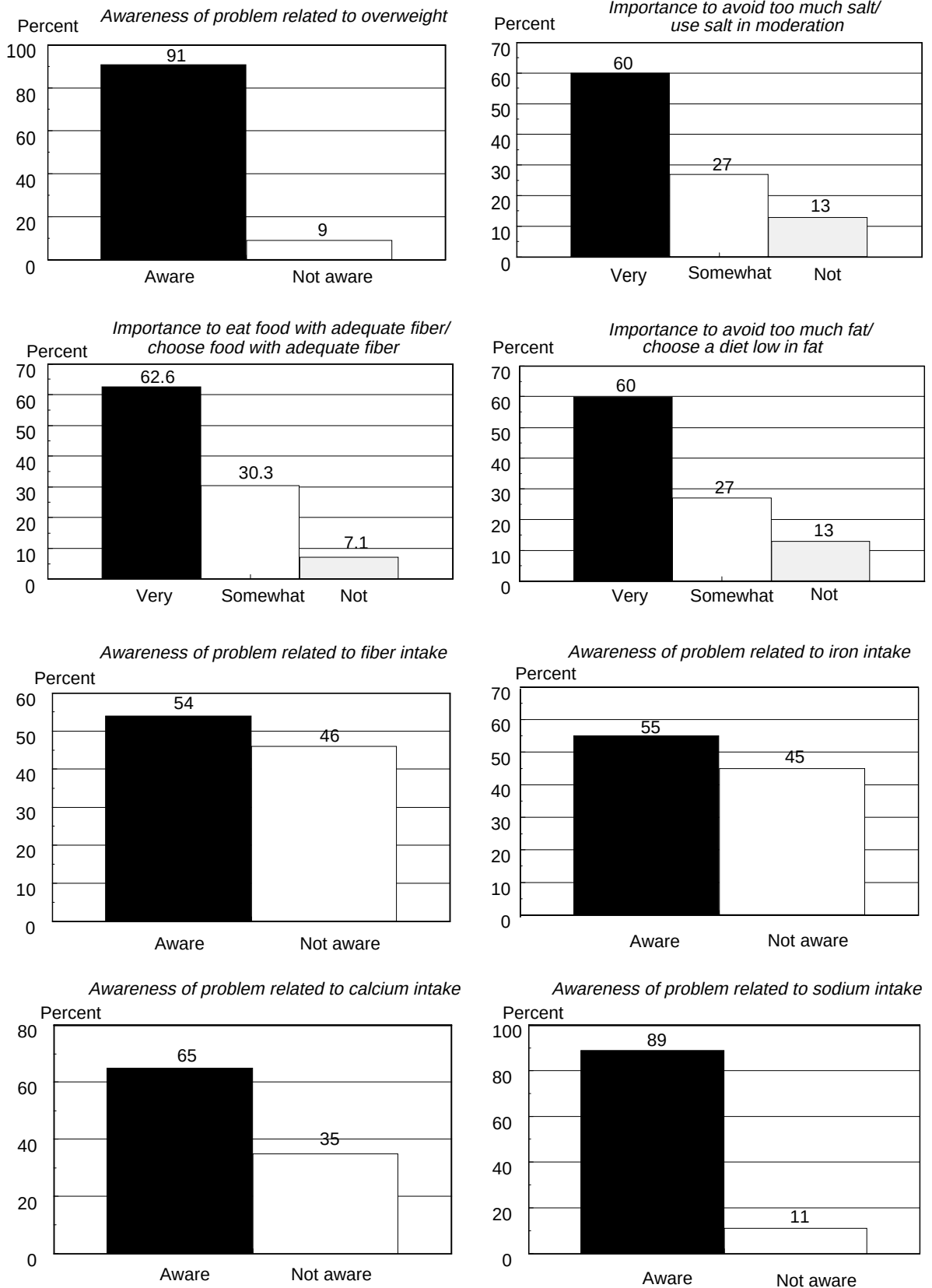
Distribution of children by household characteristics



Compiled by USDA/ERS from CSFII 1989-91, 3-day weighted average

Figure 3

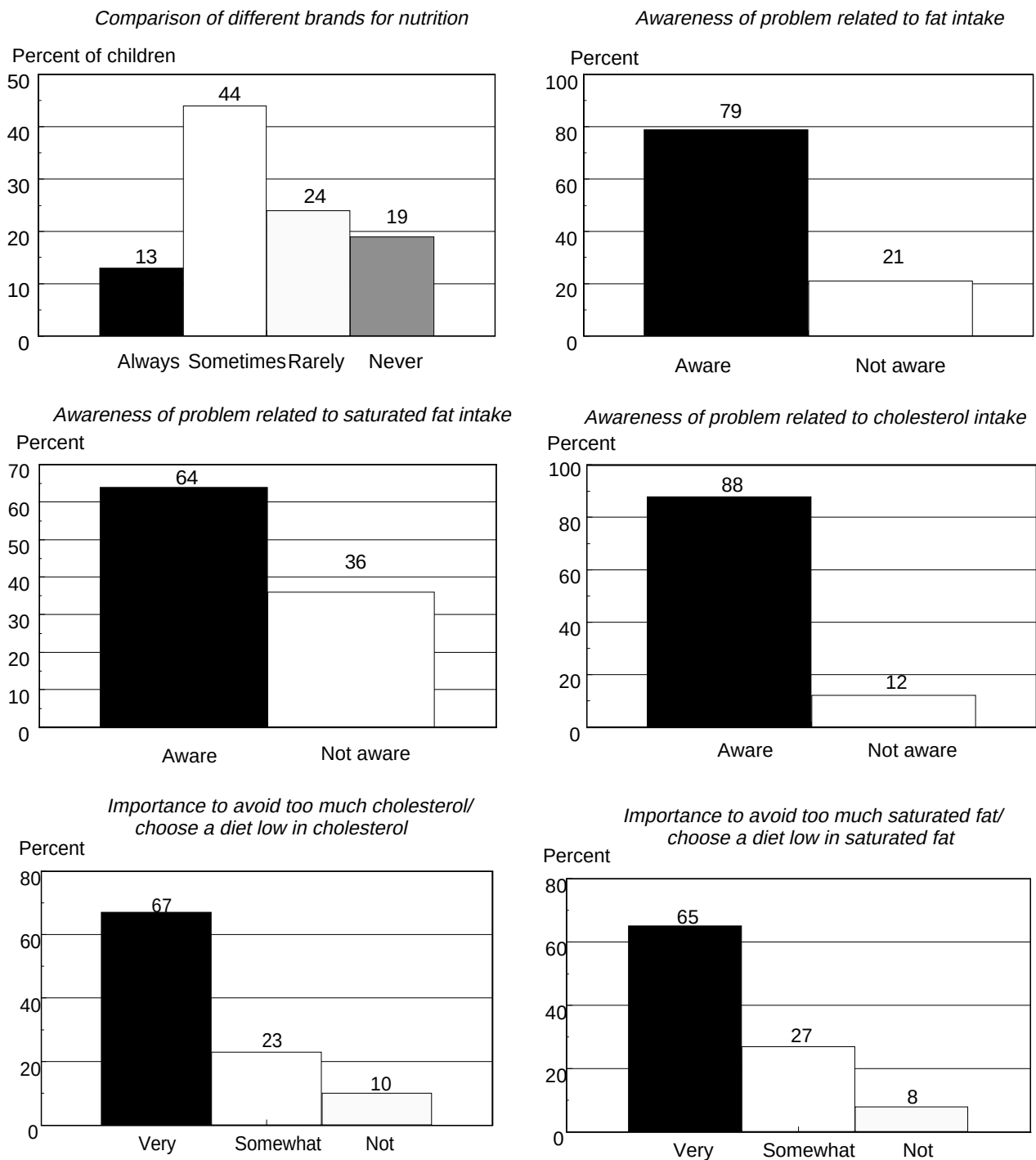
Distribution of children by meal planners' diet and health knowledge



Compiled by USDA/ERS from CSFII 1989-91, 3-day weighted average.

Figure 3

Distribution of children, meal planners' diet and health knowledge (cont'd)



Compiled by USDA/ERS from CSFII 1989-91, 3-day weighted average.

compares the nutritional content of different brands of the same food, awareness of problems related to nutrient intakes, and perceived importance of dietary advice (fig. 3).