

Poster Abstracts

Poster 1

Recoding of Foods Data for Food Patterns Identification

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Food patterns information has become increasingly important for both nutrition policy and practice. Patterns of food choices result in nutrient intakes and possibly in food contaminant exposures. Our ability to alter such intakes or exposures is constrained by our understanding of existing food intake patterns. Attempts to characterize habitual food patterns has been hampered by complexities of the food marketplace. A growing number of food items and combinations are available to consumers. Approaches to handling foods data for patterns analysis are important and needed.

We present work with the U.S. National Food Consumption Survey's (1977-80) foods data on infants (n=542). An important step in generating food patterns is the reduction of this vast food repertoire to a manageable set of food categories. This set should be large enough to capture food choice variability but small enough to generate relevant policy and/or practice findings. An additional step might be the identification of important dimensions of food choices such as food market characteristics ("home cooked", "pre-prepared", "processed"). A set of 21 combined food groupings based on infant usage characteristics were created from the 77 USDA standard food groups. Food market characteristics were identified. Categorization and recoding techniques along with conceptual backgrounds are illustrated and discussed.

Poster 2

Evaluation of Nutrient Intakes of Selected Rural Elderly:

I. Comparison By Meals and Snacks

by C. J. Lee, S. Templeton, M. Marlette and C. Wang. Human Nutrition Research Program, Kentucky State University, Frankfort, KY

Nutrient intakes of 184 elderly volunteers (60 yrs or older) residing in 10 rural counties of Kentucky were evaluated in relation to meals and snacks. Information collected by interview included questions related to sociodemography, health status, nutritional knowledge, attitudes and practices. Food intake data on two non-consecutive days were collected by 24-hr recall using plastic food models and measuring utensils. The food recall data were processed by using Nutritionist IV (N-Squared Company) for nutrient consumption. 72.8% of elderly participants indicated that they eat meals alone and the proportions were higher among lower income ($p < 0.0001$) and education ($p < 0.01$) groups. Overall, the mean intakes were low for dietary energy (67% RDA), calcium (64% RDA), and dietary fiber (47% DRV). Lunch and evening meals provided about equal portion of calories (33% each) and of the majority of nutrients studied. Breakfast supplied 23% of the total calories. Sugar and caffeine intakes were provided most by

breakfast. Consumption of carbohydrates, iron, calcium and magnesium were evenly distributed among the three meals. Snacks provided 12% of the total calories and higher proportions of sugar (19%) and caffeine (17%) than those for other nutrients studied. Among snacks, those consumed before bedtime contributed more than half of calories and all nutrients studied, followed by the afternoon snack; the morning snack contributed least. The present study suggests rural elderly need to be guided to make better food selections to improve the overall nutrient intakes and particularly timing and selection of snacks. (Supported by USDA/ CSREES/ KY.X-50-91-10H and RR6)

Poster 3

Evaluation of Nutrient Intakes of Selected Rural Elderly:

II Dietary Fibers.

by C. J. Lee, M. Marlette, S. Templeton, and C. Wang. Human Nutrition Research Program, Kentucky State University, Frankfort, KY

Dietary fiber intakes of 184 rural elderly (60 yrs and older, mean 72.1 ± 7.1) residing in Kentucky were evaluated in relation to the quantity consumed and food sources. Food intake data were collected by 24-hr recall methods for two non-consecutive days. Plastic food models and measuring utensils were used throughout survey to maintain uniformity in serving size. Nutritionist IV software was used to compute the nutrient intakes. The mean dietary fiber intake was 11.8 ± 5.7 g, constituting only 47% of Daily Reference Value. Lunch and dinner provided 35% each of the total daily fiber intakes while breakfast and snacks provided 21.4% and 8.5%, respectively. When the fiber intakes were evaluated by food groups, the vegetable group provided the most fiber intakes (4.1 g) followed by bread/grains/cereals (3.9 g), fruits (1.7 g), legumes/nuts (1.2 g), snacks/desserts (0.5 g), and mixed dishes (0.2 g). Among the bread/cereal group, whole grain bread contributed the most fiber followed by wheat bran cereals, white bread, corn bread and wheat based cereals. Potatoes were consumed most and contributed the most fiber among vegetables, followed by green beans, tomatoes, corn and peas. Among the fruits, bananas contributed most to the rural elderly's diet, followed by apples (80% with skin and 20% peeled), citrus fruits/juices, melons and peaches. ANOVA revealed that the dietary fiber intakes were not significantly impacted by age, family income level or whether the elderly consumed meals alone or not. However, the fiber intakes were significantly different due to ethnicity (whites > blacks, $p < 0.04$), gender (male > female, $p < 0.04$), and level of schooling (more schooling > less schooling, $p < 0.02$). More intensive guidance is suggested to promote increase in dietary fiber intakes among the rural elderly. (Supported by USDA/ CSREES/ KY.X-50-91-10H and RR6)

Poster 4

Estimating Nutrient Contributions from the Fat and Residual Components of Fluid Milks in the U. S. Food Supply Series

by Shirley Gerrior, Ph.D., R.D. and Claire Zizza, M.S., R.D., U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, Washington, DC 20036

The U.S. Food Supply is a historical series that measures the amount of food available for human consumption in the United States. It includes per capita estimates on several hundred foods and the nutrients available in these foods. The basic source of nutrient data used to calculate nutrient per capita values is the Primary Nutrient Data Set (PDS) from USDA's National Nutrient Data Bank. To more accurately reflect the nutrient contributions associated with the market shift from whole to low fat and skim milks, adjustments have been made to the nutrient databases used to calculate nutrient per capita values. Both fluid milk and milks with solids added are broken down into a milk-fat portion and a residual portion based on milk-fat content. Milk-fat content has been estimated using production and sales data from the Economic Research Service and the Agricultural Marketing Service, as well as from criteria outlined in the Code of Federal Regulations. In this way, food supply estimates of milk fat uniquely reflect year-to-year changes in nutrient contributions from specific milk components. A conversion factor for each milk product has been calculated and applied to the PDS nutrient values assigned to a particular milk product. This process generates the nutrient contributions from the milk-fat portion and residual portion separately. This application is appropriate for other milk products, such as creams, frozen desserts, and yogurt. The results of this process will be illustrated using 1970 and 1990 food supply estimates for selected fluid milks.

Poster 5

Analysis of the Nutritional Intake of Villagers of Tipling, Nepal

by Mabel M. Chan, PhD, Department of Nutrition and Food Studies, New York University, New York, NY

The purpose of this pilot study is to assess the nutritional intake of Nepalese residing in a hilly village, Tipling in Nepal. With the assistance of interpreter, the investigator recorded 24-h food recall of 43 villagers (21 male and 22 female). The interviews were conducted at the homes of the villagers or during their visits to the clinic. The mean age of the group was 33 yr with mean BMI of 22.1. The food pattern of these villagers was limited to a total of 32 different food and beverage items. The top six most commonly consumed food items were potato, corn flour, millet, unpopped popcorn, green chilies and radish leaves. Using available food composition tables for Indian and East Asia, nutrient intake was estimated. The mean Kcal intake is 2276 ± 1260 . Carbohydrate, protein and fat intake were 75, 12 and 12 %Kcal respectively. The analysis also showed that their diet was low in vitamins A, B-12 and zinc. It is recommended that nutrition education on food and agricultural practices is needed to improve the food intake of this group.

Poster 6

Quality Review of Intake Data from the Continuing Survey of Food Intakes by Individuals (CSFII) 1994-96

by Amy L. Green, Mark Steinwandel, Rhonda Sebastian, Martha Berlin, and Sharon Mickle, Westat, Inc. and USDA-ARS, Maryland

The quality of 24-hour recall data is of critical importance in the Continuing Survey of Food Intakes by Individuals 1994-96 (CSFII 1994-96), which is conducted by Westat, Inc., under contract to the U.S. Department of Agriculture (USDA). One quality control procedure involves a complete review of food intakes collected by interviewers. The Intake Review is conducted by trained food coders and includes three levels of edits: a scan edit to check for minimum criteria of completeness, a detailed edit of the description and amount for each reported food, and a general edit to check for common interviewer recording errors. An automated system was designed to facilitate the review and to provide interviewers with timely feedback on the quality of the Intake data. All 10,912 Intakes collected in the CSFII '94 were reviewed within a few days of receipt at Westat's home office, and summary reports of interviewer performance were supplied to field management staff. The Intake Review enhanced quality control efforts because it provided a systematic approach to monitoring interviewer work, a database that revealed interviewer performance problems, and a timely mechanism for providing interviewers with feedback on their performance.

Poster 7

Nutritional Profile of Louisiana School Lunch--Implications for Project 2001: Nutrition for a New Century.

by N.B. Baker, B.E. Dileo, and C.M. Champagne, Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, Louisiana.

The purpose of this study was to characterize and compare nutrient content of current Louisiana school lunch menus with the goals of *Project 2001: Nutrition for a New Century* and with the Recommended Daily Allowances (RDAs). We examined the question, "Is school food service moving in the right direction in order to meet the nutrition objectives of *Project 2001*?" One week of lunch menus from each of seven different school districts were analyzed using Moore's Extended Nutrient (MENU) database, formerly the Extended Table of Nutrient Values (ETNV). Under *Project 2001*, schools incorporate new health guidelines into meal planning. Criteria include offering a fresh fruit or vegetable and whole-grain products daily and dry beans/peas weekly. Unmodified processed meats and high-fat menu items are limited to one time per week. Salt and butter are not available on cafeteria tables and 1% lowfat and skim milks are available; however, 2% milk is selected by most students. With respect to sodium, only two schools had acceptable menus. In terms of high fat offerings, 63% offered more than one high fat item. Percentage of kilocalories from total fat and saturated fat exceeded the limits by 3%. When compared with current health recommendations, menu averages were on target for dietary fiber and cholesterol. Menus met at least 1/3 of the RDA for protein, calcium, iron, and vitamins A and C. The kilocalories for males 11-14 yr was 30% below the guidelines for suggested energy

intake for meal planning. Suggestions for accomplishing the goals of *Project 2001* were provided. Additional monitoring of menus and recipes through nutritional analysis and increased training of food service staff will make the goals of *Project 2001* attainable. In implementing these health initiatives, continued monitoring is essential.

Poster 8

Establishing A Pyramid Database: Issues And Possibilities

by Janice Cochran, M.S., R.D. and Kathryn F. Dennison, Ed.D., DINE Systems, Inc., Amherst, NY 14228

The release of the USDA's Food Guide Pyramid as the latest food guidance system creates a new standard against which daily intake can be compared. The purpose of this project was to establish a food database which allows for comparison of daily intake to the food guide pyramid recommendations. Plans for validation of this process will be presented.

To analyze a diet in terms of the Food Guide Pyramid, it was first necessary to classify which pyramid group a food belonged to, and second, to determine the pyramid serving for each food consumed. The pyramid group and the serving size was straightforward for single item foods, however, other foods were not easily classified. Assigning the portions of a pyramid serving for mixed foods was most difficult. Mixed foods account for the majority of food intake, so a mixed food group was added for ease of identification by the user. Pyramid servings for this group were based on the food's ingredients, its nutrient profile, or both.

To create a food database for a computerized program based upon the Food Guide Pyramid, common foods were chosen from a master database, a composite nutrient value was calculated for each food, and pyramid groups and serving sizes were assigned. Actual size food photos were included to assist users in entering the amounts they ate.

Additions to the pyramid database will have pyramid servings calculated by algorithms based on nutrient values of a given food. These algorithms could also serve as a useful tool for classifying the many processed and engineered foods in the marketplace which have non-traditional nutrient profiles.