Application of the National Nutrient Database for Standard Reference and the Food and Nutrient Database for Dietary of 24 Rural Midwestern Food Pantries using Linear Regression

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In 2014 14.0 percent of households in the United States were food insecure, meaning they had limited or uncertain ability to acquire acceptable foods in socially acceptable ways. One solution to surmount the issue of food insecurity is the emergency food system, a nationwide network of food banks, food pantries, and soup kitchens. Even with the access to food pantries, food insecure individuals have poor diet quality, including inadequate nutrient intakes of vitamins A and C, potassium, fiber, fruits, calcium, and vegetables. In order to understand the contribution of pantry foods to the nutritional needs of food insecure individuals, the quality foods that they receive from food pantries must be quantified. The Healthy Eating Index (HEI) is a score of overall diet quality in accordance to the Dietary Guidelines for Americans. The HEI is a useful tool to measure the nutritional quality of foods at food pantries, but with limitations. The major limitation is that the nutrient database used to retrieve nutrient information from pantry foods in order to rank nutrient quality using the HEI, the Food and Nutrient Database for Dietary Studies (FNDDS), contains foods only in their prepared forms which does not account for many pantry foods. The National Nutrient Database for Standard Reference (NNDSR) is an alternative nutrient composition database that provides food data for both unprepared and prepared foods. In this project, these two databases are used to classify the foods in stock (inventory) at 24 rural, Midwestern food pantries, and both the nutrient compositions and HEI scores determined by each database are compared. Lastly, a variable was created to represent the level of assumption made when classifying foods using the different databases, and added to a multiple linear regression model, in order to minimize the errors and assumptions when classifying food environments.