Comparisons of Four Diet Quality Indexes to Define Single Meal Healthfulness

To the Editor:

The authors of “Comparisons of Four Diet Quality Indexes to Define Single Meal Healthfulness” published in the January 2022 issue of the Journal of the Academy of Nutrition and Dietetics compared four different diet quality indexes to identify if these indexes could assess “nutrition quality” of single meals.1 The article is problematic in two fundamental areas: dietary patterns address total diet whereas the authors used a single meal/eating occasion, and the dietary patterns that were selected were anchored by different components: food groups and/or nutrients.

The original goal of dietary patterns has been a holistic evaluation of dietary intake relative to an existing recommendation, such as the Dietary Guidelines for Americans.2 The authors neglect to make this important conceptual distinction, stating “These indexes typically compare how well food items or diets adhere to recommended guidelines for certain nutrients and/or food groups.”1 Dietary pattern analyses have generally been a characterization of usual diet over longer time frames (eg, weeks), not a focus on a single eating occasion. The authors focused on a single lunch in a cafeteria and their analytic approach does not solve this problem. “To account for the fact that meals were being scored instead of an overall diet, each component score [of the Dietary Approaches to Stop Hypertension] was calculated using the original score range based on a density basis out of 1,000 (similar to HEI-2015).”1 The authors note that “few indexes have been developed to specifically assess the quality of meals” and in the Discussion the authors note, “what constitutes a meal can be difficult to define.”1 Yet they proceeded forward without adequately addressing these issues. For instance, if a person consumes fruit in the recommended amount during a morning meal they should not be penalized for this eating pattern if their lunch food choices exclude fruit. Yet this is effectively what the single meal-focused analysis did.

The authors did not sufficiently emphasize that the four patterns selected were anchored by different components. The Healthy Eating Index 2015 is primarily a food-based diet quality index. The Dietary Approaches to Stop Hypertension and The Nutrient Rich Foods Index are both nutrient-based indexes. The Main Meal Quality Index is a mixed index with the majority of the components being nutrients. The Main Meal Quality Index was, as the authors state “…designed to assess the overall nutritional quality of the main meal, which should provide at least 30% of the daily nutritional recommendations.”1 Yet the authors did not choose the day’s main meal, they chose a cafeteria lunch for analysis.

The diversity of purpose and scale of these four indexes is remarkable and unless rescaled and, in part, reconceptualized, the indexes would be cumbersome and unwieldy to compare. Without any analytic harmonization, one would expect the results to be very different from one another. We should not be surprised when scores differ given the underlying measured components are not the same. Harmonization across diet quality indexes can be accomplished as demonstrated by the Dietary Patterns Methods Project.3-5 These primarily total diet indexes have shown fairly consistent associations with regard to influencing health and disease.6 Some attempt at analytic harmonization should have been attempted by the authors and reported.

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