

EDITORIAL

On the quality of nutritional data

I am writing this in October, having just finished teaching in the second course on the Production and Use of Food Composition Data in Nutrition. During the course we have spent some considerable time discussing the quality of food composition data. Quality is often seen as difficult to define but essentially I think that 'fitness for the purposes for which it will be used' is a fair definition, so that one cannot judge quality without some understanding of the ways in which the data will be used. In our discussions we have tried to examine objective ways of assessing the sampling and analytical procedures used in producing compositional data against the variety of purposes for which data will be used in nutrition. This has involved study papers and the development of expert systems to try to make the assessments as objective as possible, although in most cases we found that some element of experienced judgement applied by a human being insinuated itself into the assessments. No doubt as the knowledge rules become more refined the assessments will eliminate any subjectivity.

These discussions led me to muse in two directions. First, what knowledge rules would one need to develop to ensure objectivity in the assessment of papers submitted to a journal such as the *British Journal of Nutrition*; would it be possible to formulate the rules so that they could be incorporated into the shell of an expert system? Ultimately I suppose someone will try, but I suspect that writing the rules to accommodate the entire field of nutrition would be difficult and I wonder how a paper that broke really new ground would fare.

The second direction of my musings stemmed from the comments of the participants on the course that much of the detail required to assess analytical studies was deleted from papers in response to suggestions, requests, or instructions from Editors concerned about the space that these details occupied on the page. We all agreed that such detail was often crucial to judging the data in a paper, and urged authors and Editors to think of ways in which these details could be included, in a succinct form, that would satisfy both the Editors and the readers who wish to use the data.

Although we were discussing analytical measurements of the nutrients in foods, in principle one would like all papers that include analytical measurements of any kind (which includes virtually all papers submitted to the *British Journal of Nutrition*) to recognize the importance of giving information which enables the readers to assess the quality of those measurements.

This brings me to my second theme which relates to the major use of nutritional compositional data, its use in translating measurements of food consumption into nutrient intakes. In September at a meeting to mark the 25th anniversary of the foundation of the Department of Human Nutrition in Wageningen, at which a number of Editors of nutritional journals spoke, Professor John Garrow ventured the view that our current methods for the measurement of food intake were at a stage comparable to the measurement of blood pressure before the invention of the sphygmomanometer. This comment raised quite a few laughs at the meeting, but if this comment has more than a vestige of truth it should send shivers down the spines of most nutritional scientists because it casts doubt on a technique that is the foundation of much nutritional epidemiology (and,

in truth, of nutrition as a whole, which depends on quantitative estimates of nutrient intakes) and one that is truly a nutritional technique. We must therefore look at the techniques we use and the quality of the data they generate as objectively as we would the analytical methods we use to measure vitamins, for example.

Evaluating methods for the measurement of food intakes is a difficult area, and many authors have attempted the task by comparing the various approaches in use. I was looking at the Editorial Report on a 'validation' study a few weeks ago and, like John Garrow and the Scientific Editor, I was struck by the lack of rigour in the paper. I think that researchers starting out on these important studies need to borrow from the strategies used by those studying analytical methods: collaborative studies seem to be highly essential. Clearly the analytical chemist has, for many nutrients, the possibility of using standard reference materials which are difficult to visualize in the context of measuring food intake. Biomarkers have been hailed as providing independent measures against which to judge measurements of food intake interpreted in terms of nutrients, and clearly these have a great deal of potential which is yet to be realized.

If the solution to improving these measurements was obvious to me, I would not be writing this Editorial but rather the paper which would resolve our problems, but I do wish to focus attention on the need for innovative studies to give us proper validation of these methods. In the meanwhile we need to recognize the limitations of our existing techniques and to be open about the limits of uncertainty of the data they produce. In some cases the quality may be adequate but for others it is not and perhaps we need to be more cautious in the deductions we make until we can improve on the quality of our measurements.

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