

COMPARISON OF MICRO-COMPUTER PROGRAMS FOR EDUCATORS AND CLINICIANS

Won Song
Food Science and Human Nutrition
Michigan State University
East Lansing, Michigan

Charlene Hamilton
Foods and Nutrition Department
Framingham State College
Framingham, Massachusetts

Phyllis J. Stumbo
Clinical Research Center
University of Iowa
Iowa City, Iowa

INTRODUCTION

Numerous micro-computer nutrition programs are available today in the market for nutrition educators, and clinical and research dietitians to select from (Hoover, 1988; FNIC, 1990). There is not, however, one nutrition computer software package that can be used for all purposes and populations at all situations. Selection of a software relative to the purposes and audience has, consequently, become an important task for the professionals in nutrition (Ralston and Matthews, (1988).

The needs of each nutrition educator or clinician vary widely in regard to the features and degree of sophistication of each nutrition software. For example, a nutrition educator teaching an advanced clinical nutrition class with a small number of students may choose a fairly sophisticated diet analysis system providing comprehensive evaluation on nutritional intake. Demonstration of more than one software can also be accommodated (Orta, 1987). Missing nutrient information or errors in database, or inaccuracy in program algorithm may possibly be detected by advanced nutrition students and instructor. Furthermore, these problems in software can be used as an important topic for discussion in the advanced nutrition class. Contrarily, an introductory nutrition class, especially with several hundred non-major students may not be able to accommodate a diet analysis software requiring a code book or reporting complex nutrition information.

A clinical dietitian, likewise, may be content with a convenient but robust diet analysis system when working with prenatal patients in an out-patient clinic. The same software might not be satisfactory when the person works with patients in a metabolic research unit or in a critical care unit. The requirement for the sensitivity and accuracy varies widely for different situations.

New users frequently gather information on different software through communication with experienced users or through various software reviews printed in nutrition journals (e.g., Nutrition Today, J. of Dietetic Software) and newsletters (e.g., Food and Nutrition Review, Health Action Managers). The software reviews are very helpful in finding out unique aspects of each software, capabilities, nutrient database size and, sometimes, cost. A critical piece of information that is always incomplete in the reviews is completeness of the database, which explains a significant portion of the accuracy and variability of the results.

Frequently I am requested by new software users to recommend a nutrition software package for purchase. I propose that they read one of the numerous excellent articles that address nutrition software selection and have appeared in nutrition journals (Byrd-Bredbenner C. 1988, Frank and Pelican, 1986) and in newsletters (Food and Nutrition News), or software reviews (Computer software review in Nutrition Today). The new users often seem to feel many criteria mentioned in the articles to be overwhelming or too theoretical to be practically significant. Often my recommendation ends up with combined use of 2-3 software. Why can't we choose one nutrition software package for multiple purposes with confidence?

Comparison of computer nutrition software has been reported in numerous studies (Hoover, 1983; Frank et al., 1984; Dwyer and Sutor, 1984; Shankline et al, 1985; Nieman and Nieman, 1987; Penfield and Costello, 1988; Mattes and Gabriel, 1988). A wide range of variability in the nutrient analysis results has been reported in some of these studies. Various ways of controlling the variability in the analysis results via different software has yet to be investigated systematically.

The focus of our presentation to be given by Drs. Charlene Hamilton and Phyllis Stumbo and I is "Comparisons of Micro-computer programs for educators and clinicians". We will try to address the overall topic of "Variability in intake data" contributed by dietary intake data collection and analysis by different microcomputer software.