The Pervasive Nature of Nutritional Issues: The Need for Increased Awareness


Clinical and investigative gerontologists have become accustomed to the fact that health problems attendant to geriatric populations are usually a consequence of a complex interplay of medical and psychosocial factors. For instance, gram negative bacteremia and cystitis in an elderly man may initially appear to merely reflect inadequate treatment of his benign prostatic hypertrophy. Upon closer examination, however, one might recall that the patient’s chronic lymphocytic leukemia compromises his resistance to infection and that reluctance on the part of that patient to take the appropriate medicines is related to intolerable drug-drug interactions. Further examination might reveal that severe osteoarthritis is sufficiently debilitating to discourage trips to the medicine cabinet, or that his cataracts have interfered with his ability to read prescriptions correctly. A proficient gerontologist, therefore, must stubbornly and meticulously dissect a problem if all of the important determinants are to be identified regardless of whether it be for research or clinical purposes. Such is the nature of gerontology: the multiplicity of chronic diseases, their treatments, and the complex social and physiologic issues which accompany the aging process conspire to weave an intricate web that is difficult to unravel.

In the past, gerontologists have readily recognized that nutritional issues play a role in some of the common geriatric problems such as osteoporosis and hypertension. Nevertheless, the past decade has witnessed a remarkable expansion of knowledge in the field of nutrition and aging: knowledge which increasingly indicates that nutritional issues do not merely serve as minor contributors to a few health issues. To the contrary, there is a growing consensus that nutrition figures prominently, and pervasively, as a major determinant of quality of life for the elderly.

Take, for instance, the ramifications of protein-calorie malnutrition, and the closely allied condition of diminished muscle mass. It is well accepted that protein-calorie malnutrition is a common condition among institutionalized elderly. Recent estimates suggest that it is present in 30–50% of all nursing home residents (Abbasi & Rudman, 1994). Even among community-dwelling elderly, where the problem often goes undetected (Manson & Shea, 1991; Morley, 1991), the prevalence is thought to be 5–10% (Fiatorone, 1990). Muscle mass in the extremities, in turn, is a major determinant of mobility, the ability to carry on an independent existence, and the ability to prevent disabling falls (Bendall, Bassey, & Pearson, 1989; Fiatorone & Evans, 1990; Vellas et al., 1992). Most important of all is the fact that diligent attention and appropriate intervention lead to remarkably improved outcomes with this problem.

In the hospital setting, aggressive nutritional support of malnourished elderly surgery patients has resulted in a 15% to 30% reduction in rehabilitation time and a 40% reduction in the duration of hospitalization as well as a significant reduction in morbidity and mortality (Bastow, Rawlings, & Allison, 1983; Delmi, Rapin, & Bengoa, 1990). In a nursing home setting, a modest exercise program, in conjunction with adequate nutrient intake, can significantly improve muscle strength and mobility among frail elders (Fiatorone et al., 1994).

In a similar fashion, our understanding of micronutrient needs in the elderly is undergoing a virtual revolution: requirements for elders are clearly different from those in younger adults (Russell & Suter, 1993; Wood, Suter, & Russell, 1995) and supplementation with levels greater than the present Recommended Daily Allowances (RDA) for selected nutrients convey some real health benefits. Take, for example, the issue of subtle B12 deficiency related to chronic atrophic gastritis. Plasma B12 levels diminish with age, and more so in the large minority of elders with chronic atrophic gastritis (Krasinski et al., 1986). Neurologic degeneration can manifest itself even before plasma B12 levels drop to abnormally low levels, an observation which has prompted the increasing use of more sensitive indicators of B12 status, such as serum methylmalonic acid (Lindenbaum, Savage, Stabler, & Allen, 1990). Similarly, a dietary folate intake at the present U.S. RDA is apparently inadequate for up to one third of ambulatory elders since such intake results in significant rises in serum homocysteine, an independent risk factor for cardiovascular disease, which appears to be as strong a determinant of disease as an elevated cholesterol (Boushey, Beresford, Ommen, & Motulsky, 1995).

Heretofore, this discussion has outlined compelling reasons why there needs to be wider dispersion of our recently acquired insights into nutrition and aging. It is therefore timely that several books have been published over the past 18 months whose themes are germane to this

The contents of this publication do not necessarily reflect the view or policies of the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organization imply endorsement by the U.S. Government.

This work has been supported in part by a grant from the U.S. Department of Agriculture. Agricultural Research Service Contract 53-3806-01. The contents of this publication do not necessarily reflect the view or policies of the U.S. Department of Agriculture, nor does mention of trade names, commercial products, or organization imply endorsement by the U.S. Government.

Health Care Financing Review, 16(1), 1039–1047.

Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-service systems: Results from the Medical Outcomes Study. Journal of the American Medical Association, 276(13), 1039–1047.

field. The first of these books is *Geriatric Nutrition, A Comprehensive Review, 2nd edition*, edited by Morley et al. The previous edition of this book was published in 1990 by the same editors. Some of the chapters from the first edition do not appear in this edition, and several new topics have been added.

As suggested by the title, this book attempts to cover a broad range of topics in aging and nutrition, and to a large degree it succeeds in this regard, certainly more so than the other books that are reviewed below. The editors are also to be applauded for acknowledging that nutritional science is a sophisticated and complex body of knowledge unto itself: a “comprehensive review” in this field requires an integration of information from nutritionists and gerontologists alike. In this respect, several excellent nutritional scientists outside of the field of aging have been recruited as guest authors, individuals whose expertise lends considerable insight and understanding to their respective chapters, and whose perspectives nicely complement those of the authors, who are gerontologists. Nevertheless, some of the critical chapters on topics that pertain to important and burgeoning fields, such as exercise in the elderly, are well written but treat their subjects in a disappointingly cursory fashion.

Among the four books reviewed, this one is perhaps the most useful to clinicians who want to educate themselves about a broad range of topics in nutrition and aging. Several of the chapters provide useful and practical summaries, which distill the information into sensible guidelines for the clinical care of elderly patients. Nevertheless, as might be expected from a multi-authored text, there are inconsistencies: in several chapters which beg for practical summaries, none are provided. The second of recent books in nutrition and aging, *Nutritional Assessment of Elderly Populations*, edited by Rosenberg, is a compilation of presentations from a three-day symposium held at Tufts University in 1993. The collection of speakers/authors is an impressive and illustrious group, representing many premier nutritional scientists from around the world. The chapters are in-depth, authoritative reviews which represent the perspectives of individuals who have a superb appreciation for their topics.

By intent, this volume focuses on the assessment of micro- and macronutrient status in the elderly, and the functional implications thereof. Particular emphasis has been placed on the biochemical assessment of protein and mass, lipids, antioxidant nutrients, and several water- and fat soluble vitamins. In this regard, *Nutritional Assessment of Elderly Populations* has a narrower focus than *Geriatric Nutrition: A Comprehensive Review* pertaining to therapeutic applications is largely absent from the *Nutritional Assessment of Elderly Populations*. Nevertheless, one must recall that the primary intent of the symposium, and its accompanying book, was to examine means by which to “measure and interpret the nutritional status data of the elderly ... as they identify or predict the functional and health status of the population” (p. xix).

This book is an excellent choice for the clinical researcher who is interested in seeking out definitive reviews on a number of focused topics in this field. Epidemiologists who study issues pertaining to the elderly might be particularly interested since many of the authors present data from firsthand involvement in large studies such as the Framingham Heart Study, the Boston Nutritional Status Survey, NHANES III, the Albuquerque Study, EURONUT, and the IUNS studies. Clinicians could learn a great deal from the scholarly discussions contained in this book, but such an audience is not the primary intent of the editor.

The third book is the *Annual Review of Gerontology and Geriatrics (Volume 15): Focus on Nutrition*, edited by Morley and Miller. It attempts to appeal to both the clinician and the clinical researcher, and therefore represents somewhat of a synthesis of the two books reviewed above. The nine chapters cover a limited but interesting and well-chosen array of topics, many of which are not covered in any of the other books reviewed. For instance, “Nutrition and the African-American,” may at first seem to be an odd choice for a chapter. However, when one recalls that African-Americans comprise the largest group of minority elders in the United States, and that this group has its own distinct profile of poverty and functional disability, one quickly realizes the importance of such a chapter. Nevertheless, this book is not nearly as successful in accomplishing its mission as the other books reviewed above. Unlike the first two books, the editors of *Focus on Nutrition* decided to rely solely on the expertise of geriatricians and gerontologists to write in-depth discourses on topics which require an intimate understanding of nutritional epidemiology, physiology and biochemistry. Accompanying this chauvinism on the part of the editors is a remarkable compromise in the depth of understanding and accuracy of some of the chapters. A charming, intelligent, and sensible chapter on exercise and aging stood out from all the others and is well worth the read. Individuals most likely to benefit from this book are clinical researchers; clinicians seeking practical guidance might find the lack of such information frustrating.

The *Mini Nutritional Assessment (MNA): Nutrition in the Elderly*, edited by Vellas et al., is the shortest of the four books reviewed here. Its range of topics is somewhat limited, although it actually has a broader scope than its title implies. It examines how protein-calorie malnutrition can be identified in the elderly and what some of the effective means of addressing the problem are once it is identified. The title of the volume refers to a tool for nutritional assessment which was developed by the editors. The first three chapters discuss this tool and present some of the data which validates its use. It remains to be seen, however, whether the Mini Nutritional Assessment will prove to be less, as good as, or more effective than some of the other tools which have been developed for the elderly, such as the Nutritional Screening Initiative and SCALES, a screen for Nutritional Risk. I would recommend this book for those individuals who are particularly interested in exploring various means of screening elderly populations for protein-calorie malnutrition.

I greatly encourage all gerontologists to expand their appreciation of how nutritional issues interface with all the other problems that arise in the elderly. Such an investment of time will pay for itself many times over. Some of this exploration can be accomplished through these books. However, this is a field that is extremely active; new discoveries, and their attendant implications for care, will be quickly forthcoming over the next decade. It is therefore just as important for clinicians and researchers alike to keep attuned to more recent updates through the periodical literature.

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