

Review Article

International Union of Nutritional Sciences Committee II/4 on Nutrition and Ageing: Food Habits In Later Life (FHILL) Program

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As the food supply changes and there is considerable pressure on young people to conform to a global fast food culture, the older members of society represent, in many cases, the principal repository of the society's food knowledge and skills. Thus, on the one hand they are an invaluable food and health resource for their community but on the other hand there has been a growing body of evidence that many health problems among the aged are nutritionally dependent. To this end, the need for descriptive studies of food and health among the aged, which not only aimed to document traditional food habits and beliefs but which could also predict health and survival outcomes, was identified more than a decade ago. It was thought that this information could then be used for intervention programs and in the development of culturally sensitive dietary guidelines, known as Food-based Dietary Guidelines (FBDG).^{1–3}

Between 1988 and 1993 the International Union of Nutritional Sciences (IUNS) Committee 'Nutrition and Aging' established the international 'Food Habits In Later Life' (FHILL) Program,^{4,5} which was coupled to a socio-anthropological methodology known as 'Rapid Assessment Procedures' (RAP).⁶ The RAP encouraged the expression of food culture of the study communities and, within the framework of food habits inquiries, allowed for modification of the survey instrument. It was used to obtain information on food and health beliefs and to examine further other factors possibly affecting food intake.^{7–9} One of the intentions of the FHILL study has been to provide tools for communities to establish their own assessment procedures.

The FHILL study investigated the food habits, health, lifestyle and body composition^{4,10–12} of 2013 elderly people around the world, including Greece,¹³ Sweden,¹⁴ Australia (Anglo-Celts and Greek-born),^{12,15–19} South Africa,^{20–27} China,²⁸ Japan,^{29,30} Guatemala,^{31,32} Philippines and Indonesia.³³ Potential markers of 'youthful' ageing are also being investigated using cutaneous microtopography (skin wrinkling in sun-unexposed sites) and dehydroepiandrosterone (DHEA) with the purpose of identifying nutritional and non-nutritional factors associated with a younger biological age for a given chronological age (M Purba *et al.*, unpubl. data, 1999).³⁴ The major finding from Phase I (comparative descriptive study) highlighted that it is possible to achieve

comparable health in old age in different cultural settings with widely differing food habits.^{10,35–39} At the same time, there is the opportunity for nutritionally related health improvement within and between cultural settings.

Phase II (mortality follow-up) of the FHILL study commenced in 1993 and aimed to examine prospectively the effect of food patterns, social and lifestyle variables on survival in 5–6 year mortality follow-up studies of the elderly cohorts (A Kouris-Blazos *et al.*, unpubl. data, 1999).^{40–46} From the analyses of mortality data from the elderly Greeks in rural Greece⁴⁰ and Greek-born and Anglo-Celtic Australian cohorts⁴¹ has come an understanding that food patterns, even as late as 70 years and onwards, remain predictive of survival and are also associated with function and morbidity.^{16,18} In particular, the retention of a varied but traditional food pattern (e.g. high in plant food, low in animal food) appears to be important for longevity and has implications for the development of FBDG.⁴² Also, the retention of traditional eating patterns (e.g. early breakfast, main meal consumed in the middle of the day as opposed to the evening) may also protect against obesity and elevated fasting blood glucose.¹⁹ Data from a 2-year follow-up of the South African cohort found that in men, a low baseline body mass index and raised serum ferritin levels were associated with increased mortality, whereas in women, being diabetic and having a waist : hip ratio in the upper tertile were associated with mortality. Information of this type may be useful for screening the general health risk of older adults at the primary care level and may provide indications for social or medical intervention.

Mortality follow-up studies of elderly Japanese and Swedes have also been completed and will soon be analysed, along with the Greek and Anglo-Celtic cohorts. The mortality follow-up of the Guatemalan cohort is presently underway. The value of the cross-cultural survival data not only

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Accepted 2 August 1999

relates to food patterns but will allow interpretation of the influence of social activity, social support, sleep patterns, physical activity, body composition and other biological markers (e.g. immune function, DHEA and iron stores) on survival.

The World Health Organization and Food and Agriculture Organization have now applied the FBDG framework to the nutritional and health needs of the aged.³ The results from the FHILL project should provide valuable information for their development.

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