

THE WISDOM OF THE GREEK CUISINE AND WAY OF LIFE

Comparison of the food and health beliefs of elderly greeks in Greece and Australia

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Abstract

The study of food and health beliefs of elderly (> 70 years) Greeks in Greece and Australia is part of a wider cross-cultural study of food habits and health in later life, instigated by the International Union of Nutritional Sciences (IUNS) committee on Nutrition and Ageing. With emerging evidence that the traditional Greek/mediterranean diet confers protection against some diseases namely heart disease and certain cancers (colon and breast), it may be more important to look at traditional food habits and beliefs in their cultural context in order to shed light on food-health relationships. The elderly are not only custodians of tradition but they are also wiser from a lifetime of experience, and thus form the best resource for food and health beliefs. Such information may prove particularly useful in the prevention of morbidity in today's rapidly ageing populations. Two general approaches have been incorporated into the survey instrument 1) rapid assessment procedures (open ended questions) to elicit information on food and health beliefs 2) questionnaire approach (coded answers for scoring) to elicit information on health, lifestyle and food intake over the past year. Food and health beliefs were collected from 104 (51 men, 53 women) Greeks in Spata, Greece (a semi-rural town 20km from Athens), and from 130 (60 men, 70 women) Greek migrants living in Melbourne, Australia. Food and health beliefs related to longevity and migration as well as foods/herbs for the prevention/treatment of certain illnesses are described.

The high intake of meat and low intake of legumes have been singled out by the elderly as being the cause of most modern day diseases (e.g cancer, heart disease, diabetes). The Greeks in Australia also reported that the very high consumption of meat the first 20 years in Australia (in Greece was eaten 1-2 times a month, in Australia was eaten almost every day because it was comparatively inexpensive) is the main cause for the emerging deterioration of health in Greek Australians today (mainly increasing rates of heart disease and colon cancer). They point to the Greek Orthodox Religion which recommends abstaining from animal products for at least 150 days of the year (which actually works out to about 2-3 days a week where one can eat animal products) and in place of animal products one is supposed to eat legumes, seafood, olives and olive oil, rice, pasta and bread (legumes are supposed to be eaten every Wednesday and Friday). A whole range of foods/herbs used to maintain good health or to cure certain illnesses were reported, which appear to have been extended to include modern day diseases (e.g hypercholesterolaemia). The source of such beliefs appears to have originated in the majority of cases by "word of mouth". The remedies reported in Greece and Australia were strikingly similar with minor changes to the remedy occurring on migration. The most popular beliefs were the ability of wild greens to lower blood pressure, lemons to aid weight loss and artichokes and lupins to lower blood cholesterol. Also, great importance was ascribed by > 75 % of the elderly Greek Australians to the social activity and networking available for elderly in Greek villages (due to proximity of houses and limited language barrier) and that this gives "life and health" to an elderly person. They stated that on migration they lost this social networking, and as a result tended to remain "indoors" and feel that this has contributed to their deterioration in health, well being and quality of life. Further research is required to explore the scientific basis for such beliefs.

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Introduction

The term *foodways* generally refers to ways in which a distinct group selects, prepares, consumes and otherwise reacts to and uses portions of the available food supply. The term *food behaviour* denotes the same kinds of activities, as carried out by an individual. *Foodways* and *food behaviours* tend to be stable and are, therefore, often called *food habits*. *Foodways*, *food behaviours* and *food habits* are all influenced by *food beliefs* which are predicated on history and experience. The cultural history of ancestors and geographical location shape food beliefs, as do religious and social customs, as well as physiological and psychological factors (1).

Why study food and health beliefs?

Sound nutritional practices abound in different socio-cultural groups. Groups having a stable history of many generations have food habits, beliefs and traditions compatible with survival of the group in a particular setting. Traditional food cultures have developed over thousands of years and have been tested, refined and distilled producing a repertory of foods and processes for preparing them, capable of sustaining human life in specific environments. However, the food beliefs are not always compatible with survival of weaker members of the group or with achievement of optimal health because foods were usually chosen from the array that was available (1, 2).

Consequently, rather than trying to change people's traditional food habits, based upon current scientific evidence, we should be trying to learn from them by tapping into the wisdom of their culture by enquiring about their food beliefs and how they influence health decision making. Industrialized countries, like Australia, which in most cases have "young cultures", lack this wisdom. This fact has been eloquently stated by Michael Symons (3). *"So far great cuisines have arisen from peasant societies, even if recognized by elites and refined by professionals. The rigours of survival have given the peasant a proper respect for cultivation and cooking, have demonstrated the advantages of tradition, have aroused the joys of the seasons... But, Australians have put down peasants as ignorant, superstitious, inefficient and dirty... Yet the lack of peasant experience - or, conversely, our total history of industrialization - explains why we have traditionally cared less about food than any other people in history"*.

A major difference between a food belief and a prudent health practice is the degree of backing by sound scientific knowledge. Indeed, some beliefs evolve to be prudent practices. For example, the popularity of olive oil among some groups predicated the latest scientific emphasis on monounsaturated fats and heart disease. In some cases however, knowledge and scientific evidence is simply not available and thus many resort to tradition, practical experience, and beliefs passed down from generation to generation to maintain health. Ten years ago, olive oil was not recommended for prevention of heart disease and in many cases people were advised to avoid it, but many Greeks, based on their experience where they survived famine and war simply by eating olive oil and bread, could not believe that olive oil in any way could be detrimental to health and thus

continued to consume it, not listening to medical advice at the time. However, food beliefs based upon tradition must be distinguished from contemporary food beliefs which are often ill-conceived and become popular because of the willingness of an interested person or group to trust information uncritically in order to cure illness e.g. the belief that megadoses of vitamin C cure cancer (4).

Why study the food and health beliefs of elderly Greeks?

An interest in the food habits and beliefs of migrants from Greece can readily be justified in terms of their considerable advantage in life expectancy over native born Australians and Greeks in Greece. According to 1981 mortality rates, Greek Australians are the second longest lived population in the world (Japanese in Hawaii being the first). This mortality advantage is spread over the major cause of death categories in which diet plays a major causal role - cardiovascular disease and cancer, and is being sustained after an average of over 20 years in the new environment (5, 6).

Fewest deaths are attributed to cancer in Greek-born Australians, followed by Greeks in Greece and then native-born Australians. Given that the frequency of cancers at some of the commoner sites - notably colon and breast - have been shown to increase with increasing length of stay among Greek immigrants in Australia this points to offsetting declines at other sites; stomach and cervix are likely candidates. The rate of deaths attributed to circulatory diseases is lower in Greek-born women in Australia than in Greeks in Greece; in the case of males, the levels in these two groups are comparable. Even though the rate of death from circulatory diseases is increasing in persons of Greek ethnicity, it is doing so no more rapidly among those in Australia than among those in Greece. However, the increase in ischaemic heart disease among Greek Australians is being offset by lower levels of fatal stroke. The food and health beliefs of Greeks may shed some light on the reasons for their health advantages (7).

The elderly have been specifically targetted (as opposed to their younger counterparts) because they may provide further information about the importance of traditional food and lifestyle practices in later life, as they tend to maintain and uphold such practices. The elderly are not only custodians of tradition, but they are also wiser from a lifetime of experience, and thus form one of the best resources for food and health beliefs. Such information may prove particularly useful in the prevention of morbidity in today's rapidly ageing populations. By exploring the evolution of the Greek cuisine and changes that have occurred on migration, it enables one to understand the basis for many of the food beliefs currently held by elderly Greeks.

The evolution of culture, food beliefs and "healthy" cuisines

One cannot help but ask the following questions when addressing this issue :

- a) How can the multiplicity of unusual food customs around the world be accounted for?
- b) How did humans arrive at their present

attitudes, beliefs, and behaviours in connection with eating?

c) How did humans ever determine in the first place which foods were safe and healthy to eat?

Some theorists have looked upon adaptation to the environment as involving unconscious "strategies" for increasing the gains from a successful adaptation and decreasing the losses from an unsuccessful one. A strategy that is adaptive supports a number of individuals appropriate both to a particular environment and to the complexity of their culture. For example, every culture, through a long selective process, observation, and trial and error, has surmounted the deficiency of plant foods in amino acids by developing dishes that combine and balance them. Mexicans eat beans and a maize tortilla and Greeks eat lentil soup with bread. Peasants in Mexico prepare maize for making tortillas by soaking it in water in which they have previously dissolved particles of limestone, a practice we certainly consider unusual. But studies have shown that this preparation multiplies the calcium content to at least 20 times that in the original maize while possibly increasing the availability of certain amino acids - important because the peasants inhabit an environment where animal foods are scarce (2).

No society has ever been known to approach its food supply scientifically, by analysing all the potential foods in the environment and then giving preference to those that were most nutritious. Of all possible edible foods in an environment, efforts are concentrated on only a handful because of abundance, reliability, easy preparation and cultural and economical considerations (2). Douglas (8) states that: "*Culture creates the system of communication among humans about edibility, toxicity, and repleteness. Culture is the distinctively human cognitive activity of classifying, valuing and ranking. It organizes the environment into systems and subsystems*".

Culture has numerous effects on food beliefs and habits. In the traditional sense, culture is a design for living within a society that is transmitted from generation to generation. Through the influence of culture an individual learns how people "should" behave in various situations. Particular foods and eating behaviours are an integral part of the mosaic of culture. Culture influences what is considered to be acceptable food and attitudes about relationships of food and health. Cultural practices such as traditional food behaviours promote a sense of stability, security, and belongingness. These feelings provide motivation for maintaining traditional ways (1, 9).

Iranian peasants today eat essentially what their Persian ancestors did more than 6000 years ago. The reason for this conservatism is the limited number of foods regarded to be edible - a selection that is passed on through the generations as part of the *accumulated wisdom of society*. The fear of new foods (neophobia) has been documented in other mammals, including primates and undoubtedly it has been advantageous for survival. Foods previously eaten without difficulty are safe; new foods are a possible danger. Foods were tested for safety by allowing animals to eat them or by asking people already inhabiting a new location or the elders who had experience about the safety and preparation of unfamiliar foods (2).

The origin of most cuisines is lost in the unrecorded past. Everything about the way the Chinese and Greeks have traditionally eaten illustrates with particular clarity the major characteristics of a cuisine: the combined influences of the environment (the availability of certain food stuffs), culture (the technology for producing and preparing food as well as the social and economic systems) and ideology (the body of beliefs about food and its place in society). In addition a cuisine that endures must be adaptive in providing adequate nutrition and proven to maintain civilizations in good health. Good health is not simply an absence of disease; it involves the maintenance of vital energy by a harmonious balance of different foods and drinks (2). Epidemiological studies of today, which rarely span more than 30 years, may provide scientific evidence about food-health links, but lack the practical experience and wisdom of ancient cuisines that have survived and been tested over thousands of years.

The evolution of the Greek cuisine

Discussions concerning the dietary habits of the classical Greeks (500BC-338BC) seems to be derived from a mixture of speculation and literary evidence (contemporary writings of poets, philosophers, doctors and other writers). Some historical accounts are preserved of cooking recipes, recommended foods and beverages for optimal health and also the medicinal properties of certain foods and beverages including herbs and spices. The basic diet of the classical Greek is described by White (10) as "*strong, though not exclusively vegetarian, comprising a variety of cereals (mainly as whole grain bread), vegetables (green and dried), pulses, fruit (fresh and dried), milk, cheese, olives, olive oil, fish, poultry and a little red meat, with wine (diluted with varying proportions of water) as the only drink, apart from water*".

In classical Greece, the commonest meat was from goats. Beef might be eaten occasionally after a sacrifice, but the cow, like the ox, was a working animal, and milk was normally obtained from sheep and goats, while olive oil took the place of butter. Fish, (both fresh and salted), and poultry were more commonly eaten compared to red meat. Meat was scarce and most people ate it only on the occasion of a sacrifice or celebration. The two principal grains were wheat and barley, although barley was considered to be inferior to wheat. In general, cereal and its products (e.g. bread, pasta) were regarded the most valuable foods. The three most readily available fruit crops were grapes, figs and olives, which were also available in their dried form when out of season. Wines and olive oil were abundant enough to be exported and exchanged for grains because 75 % of Greece's terrain is mountainous, and thus not a good cereal growing country. The other foods in an ordinary diet would be cheese (in preference to milk) of many different kinds, made from goat or sheep milk, pulses (including lupin seeds), vegetables and fruit, particularly figs. The variety of vegetables was remarkable: cabbage, lettuce, watercress, celery, all kinds of green leaves (wild greens), leeks, radishes, onion, garlic and many more (potatoes were introduced much later) (11-16).

The contemporary Greek cuisine and changes on migration

If we accept the limitations and inadequacies of

dietary information contained in literature of classical times, we can still see the importance of a historical account of dietary habits of the Greeks because many aspects of the Greek diet have been maintained over the ages to the present day. In the 7 country study (17), a total of 60 years old men in the rural areas of Crete and Corfu during the period 1960-1965 were found to be consuming 30 g of legumes daily, especially broad beans, lentils, haricot beans, dried peas and chick peas. Their diets were found to be "dominated" by olive oil and bread (85-95 % extraction). These 2 items alone accounting for 50-60 % of total energy intake. The meat consumed was mainly goat, beef and lamb, which was not eaten as often as fish (mainly sardines and cod). Milk as a drink was little used, fetta cheese however was consumed regularly. Preliminary data from elderly Greek men and women (> 70 years) (18, 19) also indicates that Greeks are still consuming many traditional foods with the following mean intakes; 30-40 g pulses/day, 40-50 g olive oil/day, 40-60 g fetta/day as opposed to only 90-100 g milk/day, 30-40 g fish/day and continued high intake of vegetables (240-320 g/day), fruit (170-200 g/day) and bread (100-170 g/day). The only change observed is the substantial quantity of beef (30-40 g/day), lamb (20-30 g/day) and poultry (16-24 g/day) consumed, which is also evident from Food Balance Sheets during the period 1961-1985 (20).

On migration, the increase in meat consumption is even more pronounced. The diet histories of 24 female patients with cholelithiasis who had migrated from Italy, Greece, Sicily, and Crete, were taken for an "average" week in their country of origin and in Australia, prior to symptoms of gall bladder disease. Although the subjects adhered to traditional ways of food preparation and cooking in Australia, they had increased their meat intake (especially beef) from once or twice a week to once or twice a day, and decreased their intake of vegetables, bread and pasta. An increased intake of biscuits, soft-drinks, canned fruit and beer were described, as well as decreased consumption of milk, cheese and eggs (21).

Similarly other studies have confirmed these findings. Powles *et al.* (22) studied food habits in siblings who migrated from the Greek island Levkada, comparing these with the siblings who stayed behind. A total of 1474 individuals were studied (694 siblings, 365 spouses, and 423 offspring). Median duration of residence for migrants was around 20 years. The most notable differences in the migrants were the lower intakes of wine, olive oil and higher intake of meat. Beef, lamb and chicken were all consumed much more frequently by migrants. Migrants also consumed cows milk more frequently (as opposed to goats milk), as well as yoghurt, ice cream and margarine, whereas cheese and eggs were eaten less frequently. Also frequency of consumption of wild leafy greens, legumes, fruit and fish had slightly decreased in the migrant group; expenditure on these foods, including meat, olive oil and eggs, is still higher than that of native born Australians (23). However, this increase in meat consumption has occurred against a background of continued high fruit intake, vegetables (especially wild greens), legumes, cereals, olive oil and fish, in a cuisine that is still identifiably Greek. With emerging evidence that the traditional Greek and mediterranean diet confers protection against some diseases, namely heart disease and cancer (32), it may be more important to

look at traditional food habits and beliefs in their cultural context, in order to shed light on food-health relationship.

In this paper we report food and health beliefs of elderly Greeks living in Spata (Greece) and Melbourne (Australia) with the purpose of identifying :

- 1) food and health beliefs related to longevity and migration
- 2) beliefs on food and herbal remedies used to treat or prevent illness

Methods

Study Populations

The study of the food and health beliefs of elderly Greeks in Greece and Australia is part of a wider cross-cultural study of food habits and health in later life, instigated in 1988 by the International Union of Nutritional Sciences (IUNS) committee on Nutrition and Ageing (24, 25). In particular we are interested in studying what aspects of past and present food intake and other lifestyle factors are associated with longevity and health in later life in populations groups with different dietary habits (Australia, Greece, United States (New York, Galveston), Sweden, China, Japan, Guatemala, Mexico, Costa Rica, Jamaica, Kenya, Phillipines, Indonesia). Representative samples of 100 men and 100 women, 70 years and over, are being studied in most study centres where possible. Projected year of completion in 1993.

Elderly Greeks in Spata

Spata is located about 20 km from Athens. Spata was chosen for a number of reasons: a) because of its proximity to Athens, which made it convenient for the researchers b) due to the maintenance of a traditional Greek diet by most in this town which would act as a good standard by which to determine the degree of dietary change made on migration by elderly Greeks in Melbourne c) most families in Spata have been there for many generations, which households being multi-generation and still very traditional in their way of life, thus making it an ideal set-up for the study of traditional Greek culture, food habits and beliefs. The economic basis of this rural area is subsistence agriculture. Olive oil, olives for eating, grapes and wine are the main products supplemented by figs, nuts (almonds), pomegranates, pulses, goats milk and chicken eggs. There is very little rain in summer and the rocky terrain presents limited opportunities for modernised agriculture. Impressions suggest that Spata is above the rural Greek average for "affluence" and "modernisation" given that 10 years ago the Greek Government encouraged residents to sell their land for a sizeable sum of money so that the new Greek airport could be built in the vicinity. At the 1981 census, the total population of Spata was 6 398. At the time of the study (June-October 1988), the total population was about 10 000. The total number of people from the electoral rolls aged 70 and over was 640 which represented about 14 % of the total population at Spata. A representative sample of 104 subjects (51 men, 53 women) aged 70 and over were selected from the electoral rolls. It was not possible to complete the study of the intended 200 subjects due to inadequate time. The electoral rolls were chosen to

sample the elderly because less than 90 % of all households have a telephone in Greece.

Elderly Greeks in Melbourne

Over 30 % of Melbourne's population of 3 millions are either foreign-born or the children of foreign-born parents. Melbourne has been the commonest destination for Greek migrants to Australia (world's third largest Greek city) and there are approximately 127,000 who claim Greek ancestry (1988 Australian census), of which 65,11 were born in Greece (5). According to the 1986 census (Australian Bureau of Statistics), the total number of people speaking Greek at home in the Melbourne Statistical Division (MSD) was 119,691 (19 % of Melbourne's 3 millions) of which 4 864 are aged over 65 (men 2 246, women 2 618). Therefore, 4 % of the Greek speaking population in Melbourne is aged over 65 years.

The majority of Greeks in Melbourne are from village communities from all parts of mainland Greece and its islands. In recent years they have tended to move out of the central city suburbs where they initially congregated until they were established and able to afford better homes in the outer suburbs. Greek food shops are common in the metropolitan areas and Greek people can buy many of their own specialty food stuffs. The majority of Greek immigrants are found in the food business in Australia - characteristically in "fish-and-chips" shops, as well as in factories. A minority of Greek immigrants entered the farming industry in Australia even though they were familiar with this kind of work in their homeland. Impressions suggest that the majority of Greeks in Melbourne are above average for "affluence" (14).

In Melbourne, it was possible to study Greeks from Spata because only a few families had left Spata to migrate to Melbourne. Alternatively, we chose to take a cross-section of the Greek-speaking community in Melbourne. In contrast to the sampling method used in Spata (electoral rolls), the telephone directory was chosen as the method for sampling the elderly Greek migrants because more than 90 % of all households in Melbourne are telephone subscribers. The Melbourne electoral rolls were not chosen as a sampling method because the likelihood that most elderly Greeks would be listed there was doubtful. A representative sample of 200 Greek Australian sounding surnames have been selected from the Melbourne telephone directory, with reference to a list of commonly used Greek surnames subscribing to a popular Greek newspaper. All individuals selected live in the urban parts of Melbourne. All subjects in the household, aged 70 and over and who claimed to be of Greek ancestry, were eligible for the study. So far, out of the intended sample of 200, 130 elderly (60 men, 70 women) Greek migrants have been studied from January to July 1990. This paper will report on the food and health beliefs so far collected from 75 elderly Greeks in Melbourne and 104 elderly Greeks in Spata.

Field Methods

An interviewer administered survey instrument has been developed (25) for cross-cultural measurement of food habits, health and lifestyle which may affect health outcomes in the aged. Two general approaches have been incorporated into the survey instrument :

a) *Questionnaire approach* (coded answers for scoring) to elicit information on food intake, health, lifestyle, and demography. Lawton's "Multilevel Assessment Instrument for the Elderly" (26) has been adapted to obtain the lifestyle, wellbeing and subjective health scores. Usual food intake is assessed using a quantitative food frequency questionnaire adapted from the Australian Polyp Prevention Project (27).

b) *Rapid Assessment Procedures (RAP)* (open ended questions) to elicit information on food and health beliefs. Anthropologists, Scrimshaw and Hurtado (28) have developed guides which allow rapid assessment of beliefs, perceptions regarding health and the prevention and treatment of illness and utilization of traditional and biomedical health resources. The data collection guides are intended to help investigators focus the research, organize the data collection process and standardize the information gathered. There are recommended to be used as outlines for the formulation of questionnaires, checklists and other data collection instruments. These guides have been modified to develop a set of open ended questions to obtain information on food and health beliefs of elderly Greeks.

*The questions included are as follow (questions marked with an * are discussed in this paper) :*

- * 1. What advice would you give to your children and grandchildren about how to stay healthy and live a long time?
- * 2. Are there any foods you think are good for health? How do you know?
- * 3. Are there any foods you think are bad for health? How do you know?
- * 4. What traditional health practices are you aware of that can be used to treat or prevent certain illnesses, injuries? How do you know?
5. What do you think has contributed to your longevity?
6. What foods are good or bad for children? What were you fed as a child?
7. What foods are good or bad for people your age?
8. What hard times can you remember where there was a shortage of food e.g. war, famine? What foods did you eat and for how long? How did it affect your health?
9. What was a typical week's food intake when you were in your early twenties and how do you think it affected your health?
- *10. How has your food intake changed on migration and how do you think this has affected your health? Which foods have been detrimental or good for your health?
11. Do you think Greek Australians are healthier than Anglo-Celtic Australians? If yes, why?
12. Do you think Greek Australians are healthier than Greeks in Greece?

A single home visit was made to collect information, using the interviewer administered survey instrument (total interview time 3 hours). When the subject was unable to answer questions independently (e.g. due to dementia, senility) a relative/friend was used to assist in answering questions.

Results and discussion

Food and health beliefs were collected from 104 elderly Greeks (51 men, 53 women) in Spata (a semi-rural town 20 km from Athens), Greece and from 130 Greek Australians (60 men, 70 women).

Beliefs on longevity and migration

Food and health beliefs related to longevity and migration are summarized in tables 1 & 2 and prevalence indicated as a % of respondents having the same beliefs: > 75 % (very common = VC), 50-75 % (common = C), 25-50 % (less common = LC), 1-25 % (uncommon = UC). The place where the beliefs are held are abbreviated as follow: S = Spata, M = Melbourne, S,M = belief held in both places. If the belief has originated from traditional sources e.g. beliefs passed down through generations, it is classified as "old", "new" if originated from contemporary sources e.g. magazines, doctor, "mixed" if an "old" belief has been modified to explain modern day diseases. The majority of elderly Greek respondents (> 75 %) in Greece and Australia expressed grave concern about their children and grand-children eating too much meat and "convenience" foods and not enough traditional Greek food, especially legumes (19). Of all the foods, the high intake of meat and low intake of legumes have been singled out by the elderly as being the cause of most modern day diseases (e.g. cancer, heart disease, diabetes). The Greeks in Australia also reported that the very high consumption of meat the first 20 years in Australia (in Greece was eaten 1-2 times a month, in Australia was eaten almost every day because it was comparatively inexpensive) is the main cause for the emerging deterioration of health in Greek Australians today (mainly increasing rates of heart disease and colonic cancer). They point to the Greek Orthodox Religion which recommends abstaining from animal products for at least 150 days of the year (which actually works out about 2-3 days a week where one can eat animal products) and in place of animal products one is supposed to eat legumes, seafood, olives and olive oil, rice, pasta and bread (legumes are supposed to be eaten every Wednesday and Friday). The elderly indicated that they are trying to follow this "healthy tradition" of fasting animal products. However, the majority of the elderly are living with their children and rely on them to prepare meals; legumes are unpopular with the younger generation and thus are not regularly cooked in Greek households, unless specifically cooked for the older members of the household.

The great importance ascribed to legumes by the elderly Greeks for longevity and health can also be found in history. A remarkable and as yet unexplained sign of their status in the ancient world is the fact that each of the 4 major legumes known to Rome lent its name to the prominent Roman family, eg Fabius from the faba bean, Lentulus from lentil, Piso from pea and Cicero, most distinguished of them all, from the chick pea. No other food group has been so honoured (29). The seeds are on average twice as rich in protein as the grains, as well as iron and B vitamins. Some legumes are eaten green in the pod, when they contain more vitamins A and C, but much less protein.

Also, great importance was ascribed by > 75 % of the elderly Greek Australians to the social activity and networking available for elderly in Greek villages (due to proximity of houses) and that this gives "life and health" to an elderly person. They stated that on migration they lost this social networking, and as a result tended to remain "indoors" and feel that this has contributed to their deterioration in health, well being and quality of life.

Beliefs on herbal and food remedies

The elderly Greeks in Greece and Australia reported a whole range of foods and herbs used to maintain good health or to cure certain illnesses, which appear to have been extended to include modern day diseases (e.g. hypercholesterolemia). The source of such beliefs appears to have originated in the majority of cases by "word of mouth". The remedies reported by the elderly in Greece and Australia were strikingly similar with minor changes to the remedy occurring on migration.

The most popular remedies are summarised below in reference to current evidence available:

Foods

Chilly (Capsicum frutescens)

Belief: Chillies help you live a long time if eat some every day, they keep you strong and give you energy, they clean your blood of toxins but they can increase blood pressure and cause stomach ulcer.

Evidence: Contains capsaicin which can raise blood pressure and metabolic rate, increase satiety and give relief to neuralgia. There is no evidence that it affects longevity or causes stomach ulcers. Dose required to have effect on metabolic rate, obesity, blood pressure and neuralgia currently under investigation (30, 31).

Garlic (Allium sativum)

Belief: Garlic is the major ingredient in Greek food. If eaten daily it keeps one in good health and helps you live a long time. It lowers blood pressure and blood fats so is good for the heart, kills worms in the gut, kills bacteria so is good for colds, strengthens body, especially heart and nerves.

Evidence: Contains diallyl disulphide and alliin which are bactericidal, hypocholesterolaemic, hypoglycaemic, hypotensive and insecticidal, also contains apoene which affects platelet aggregation. There is evidence that garlic lowers LDL cholesterol and increases HDL cholesterol as well as lowering blood pressure, but the dose needed requires confirmation (30-32).

Onions (Allium cepa)

Belief: Greeks eat a lot of onion raw and major ingredient in food. A whole onion sliced on top (but still in tact) can be placed in water overnight and water drunk before breakfast to lower cholesterol, blood pressure and treat heart disease. Eat onions daily for good health, preferably not fried. Onions also help get rid of colds and to treat wounds.

Evidence: Contains alliin which is hypoglycaemic, hypocholesterolemic and bactericidal. No evi-

dence that drinking the water in which the onions have been soaked is more beneficial than eating the actual onion. The amount of onion required to treat conditions to scientifically established (30, 31).

Wild greens or Chikory (Cichorium intybus)

Belief: This is boiled and eaten with oil and lemon as a salad; the water in which they have boiled can also be drunk as a tea and is even better for you; it is the best of all wild greens, is essential for good health, is good for the kidneys and blood, it removes kidney stones, lowers blood pressure, cholesterol and blood sugars, especially if water (tea) is drunk.

Evidence: Leaves, especially the root are considered diuretic; contains inulin (hypoglycemic); effects mainly seen when leaves and root are drunk as a tea; no toxic effects ever recorded; dose required not scientifically established to treat conditions (30, 31).

Oranges (Citrus aurantium) and Lemons (Citrus limon)

Belief: Oranges although good for health and for treating colds should be avoided by those with high blood pressure. Lemon should be used as liberally as possible on food for general good health. If the juice of one lemon is consumed in a glass of luke warm water every morning 30 min before breakfast this lowers blood pressure, treats constipation and aids weight loss. Lemon is also good for arthritis and kidneys, especially for removing kidney stones (19).

Evidence: Oranges and lemons contain hesperidin and quercitrin which are vasopressors and also anti-inflammatory. Lemons also contain myristicin which is a diuretic as well as noradrenaline (which may affect metabolism rate?). There is no evidence that they affect blood pressure, weight or kidneys. More research required (30, 31).

Potatoes (Solanum tuberosum)

Belief: One cup of raw potato juice drunk every morning before breakfast for 4 days lowers cholesterol. In general potatoes are very good for you, Greeks eat a lot of potatoes.

Evidence: Contain pectin, choline, b-sitosterol, sigmastero, caffeic acid and cholinergic acid, all of which are hypocholesterolemic. More evidence is required about the use of raw or cooked potatoes in atherosclerosis (30, 31).

Cornmeal (Zea mays)

Belief: The corn silk is good for removing kidney stones. Cornmeal lowers cholesterol if 1 tablespoon is left overnight in water and drunk in the morning before breakfast for one month.

Evidence: Cornsilk contains diuretic that compounds (wax, quercitrin) but has not been proven to remove kidney stones. There is evidence that cornmeal lowers cholesterol but more evidence is required. The reason for drinking the water rather than the cornmeal is unclear (30, 31, 33).

Artichoke (Cynara scolymus)

Belief: The leaves, stem, root and flower are good for lowering cholesterol and blood sugars. Can be eaten as a boiled salad with oil and lemon, but water in which it was boiled must also be drunk or can dry leaves and drink as tea, at least one cup every morning on an empty stomach.

Evidence: Contains cynarin which is hypocholesterolemic and inulin which is hypoglycemic found mainly in stem, leaves and root (not in flower top). More research required to establish dose (30, 31).

Grapes (Vitis vinifera)

Belief: When grapes are eaten exclusively (up to 5 kg/day) for no more than 40 days (known as grape therapy and recommended by Hippocrates), they can cure the body of all illnesses e.g. diabetes, atherosclerosis, hypertension, cancer. Grape therapy is still practiced by elderly Greeks and priests in Greece. Everyone should do this every year to keep body in good health, cleanses body of all toxins (19).

Evidence: Grapes have a high glycemic index and if eaten in large quantities may rise blood sugar levels in the diabetic. Contains quercitin (a vasopressor), inositol choline (hypocholesterolemic), coumarin (hypoglycemic and antitumour), saponins (hypocholesterolemic, antitumour). Grape therapy has not been proven scientifically to cure any illnesses, research needed (30, 31).

Lupin (Lupinus albus) and most other legumes

Belief: Legumes are essential for health and must be eaten twice a week (19). Lupins are a member of the broad bean family but slightly smaller. They are very bitter and only found in Cyprus and in state of Greece called Mani. Traditionally they are put in large sacks and left in the sea for a few days in order to remove bitter taste. They are then boiled or roasted and eaten like a nut. They are very good for you, they give you strength. They can also be used to lower cholesterol, blood pressure, and lose weight by swallowing 2 uncooked skinned and crushed lupins every morning before breakfast for a few months.

Evidence: There is no evidence that lupins lower cholesterol, blood pressure or weight. More research required. However, there is evidence that most other members of the legume family (haricot beans, chick peas etc) are both hypocholesterolemic as well as hypoglycemic (33, 34).

Parsley (Petroselinum crispum)

Belief: Should eat as much parsley in diet as possible, use in cooking in large quantities for good health. If boiled (leaves and roots) and drunk as tea, it lowers blood pressure, increases urination, removes kidney stones, lowers cholesterol and blood sugars. If boiled with nettle, mint and couchgrass, and drunk as tea, it removes kidney stones.

Evidence: Contains apiole and myristicine especially in root (diuretic), bergapten (anti-inflammatory, antihistamine). Evidence lacking on its use for conditions mentioned (30, 31).

Herbs

Rosemary (Rosemarinus officianalis)

Belief: The leaves can be drunk as a tea. One cup daily keeps one in good health. It is particularly good for diabetics and lowering blood sugars and for calming nerves and for treating colds.

Evidence: Contains volatile oils borneol and camphor (antiseptic), cineole (treats rhinitis, pharyngitis). Insufficient evidence for its use in diabetes (30, 31).

Peppermint (Mentha piperata)

Belief: Drunk as a tea, used to lower blood pressure by thinning blood, lowers cholesterol and blood sugars, cleans out the kidneys, and good for colds. Good to drink one cup daily for good health.

Evidence: Contains valeric acid and phellandrene (hypotensive), salicylates (antipyretic, analgesic). Evidence lacking for its use to treat conditions mentioned (30, 31).

Table I. What advice would you give to your children and grandchildren about how to stay healthy and live a long time?

Beliefs of Greek Elderly (> 70 years)	Place held S = Spata M = Melb	Prevalence ¹ VC, C LC, UC	Historical basis M = mixed O = old N = new
1. Do not smoke	S,M	VC	M
2. Do not have late nights	S,M	VC	O
3. Wake up early in the morning	S,M	C	O
4. Have a nap every day in afternoon	S	VC	O
5. Get plenty of sleep every night	S,M	C	O
6. Get plenty of fresh air	S,M	VC	M
7. Live in a climate that is not humid, and where temperatures do not fluctuate (like Melbourne); the mediterranean climate, is the best in the world	S,M	VC	O
8. Do plenty of exercise, especially walking	S,M	VC	O
9. Work hard for as many years of your life	S,M	VC	O
10. Avoid stress and worry, try always and be happy; laughter is very good for your health	S,M	VC	O
11. Remain as sexually active as possible with spouse	S	VC	O
12. Be as socially active as possible, especially in old age, and create good social support networks	S,M	VC	O
13. Believe in the Greek Orthodox religion and perform all fasts e.g fast animal foods for 40 days before Easter	S,M	VC	O
14. Drink 1-2 glasses alcohol daily, but never get drunk; wine (as opposed to other sources of alcohol) is the most beneficial to health, but always drink with food	S,M	VC	O
15. Try and remain slim	S	C	M
16. Do not eat a lot of food even if active, eat small serves	S,M	VC	O
17. Have regular meals and have the largest meal for lunch	S,M	C	O
18. Eat a little of everything; variety is very important	S,M	VC	O
19. Avoid fried foods, prefer casseroles/stews i.e wet foods (as opposed to grills/roast) which are more nutritious	S,M	VC	O
20. Eat meat only once a week, prefer lamb, goat or rabbit to beef, eat poultry no more than once a week	S,M	VC	O
21. Eat fish 2-3 times a week, not daily	S,M	VC	O
22. Legumes are essential for good health, eat 2-3 times a week			
23. Eat plenty of vegetables only in season, especially wild greens, which should be eaten at least twice a week	S,M	VC	O
25. Eat fruit in moderation; fruit are not as healthy as vegetables; fruit are not essential to stay healthy as long as a lot of vegetables are eaten; best fruit are seasonal fruit, especially grapes	S,M	C	O
26. Eat plenty of bread, does not have to be wholemeal	S	VC	O
27. Eat plenty of dairy products from sheep milk, especially yoghurt	S	C	O
28. Use lemon juice liberally on all dishes/foods	S,M	VC	O
29. Avoid eating sweets, sugar and soft drinks	S,M	VC	M
30. Limit coffee to 2-3 cups daily, prefer Greek coffee	S	VC	M
31. Drink plenty of herb teas e.g chamomile instead of tea	S	VC	O
32. Eat only olive oil, in liberal quantities (about 2 tablespoons daily), preferably added to food once cooked; avoid butter, margarine and other oils	S,M	VC	O

¹VC = very common, belief held by > 75 % of subjects,
C = common 50-75 % of subjects,

LC = less common 25-50 % of subjects,
UC = uncommon 1-25 % of subjects.

Olive tree leaves (*Olea Europea*)

Belief: Drunk as a tea every morning before breakfast to lower blood pressure.

Evidence: Contains oleuropein (hypotensive). No evidence that it treats hypertension (30, 31).

Mountain tea (*sideritis sp*) and Sage (*Salvia officinalis*)

Belief: When these herbs are drunk as tea they help lower blood pressure, blood sugars and cholesterol. They are good for the blood, kidneys, pain colds and general good health.

Evidence: Sage contains phytoestrogens, ursolic acid (diuretic), thujone and cineole (antiseptic), saponins and borneol. Mountain tea contains tritopenic acids (diuretic). Insufficient evidence for their use in conditions mentioned (30, 31).

Table II. How has your food intake changed on migration and how do you think this has affected your health? Which foods have been detrimental of good for your health?

Distant Past Food Intake (living in Greece > 30 yrs ago, aged < 40 yrs)	Past Food Intake (first 15 yrs in Australia aged 40-60)	Current Food Intake (last 15 yrs in Australia, aged > 60)	Belief of Benefit/Harm of Food to health	Prevalence ¹ VC, C LC, UC
<i>Lamb of goat</i> eaten 1-2 times a month <i>Beef</i> rarely eaten	Eaten almost every day	Eaten less than once a week	Harmful if eaten more than once a week	VC
<i>Chicken</i> eaten once a week <i>Fisk</i> eaten 2-3 times a week <i>Eggs</i> eaten daily	Eaten almost every day Eaten more than once a week Eaten 1-2 times a week 2-4 eggs eaten a week Cow's milk drunk daily	Eaten 2-3 times a week Eaten less than once a week Eaten 1-2 times a week 2 eggs eaten per month Cow's milk drunk daily	Harmful if eaten more than once a week Not as harmful as red meat; eat < 2 times/week Beneficial when eaten 2-3 times a week Beneficial when eaten daily Beneficial when drunk daily, but sheeps's milk is better	VC VC C C
<i>Milk</i> not available daily, drunk when sheep/goats had milk in spring <i>Cheese</i> was eaten, daily, mainly white cheese (fetta) <i>Yoghurt</i> eaten in large amounts, made from sheep/goat's milk, 2-3 times a week <i>Legumes</i> eaten 3-4 times a week <i>Vegetables</i> eaten in large amounts daily in season especially wild greens	Fetta replaced with ripened high fat yellow cheese, more eaten Not available to buy, home made with cow's milk, less eaten Eaten twice a month Eaten daily when in season - less eaten; reduced intake of wild greens	Ripened cheese replaced with fetta, eaten in smaller amounts daily Less eaten, most bought, made from cow's milk, eaten less than once a week Eaten once a week Eaten daily in season grown at home, small amounts eaten out of season, overall less eaten, wild greens eaten only 1-2 times a week Fruit eaten all year round, more apple & oranges, still eat alot of seasonal fruit, more fruit eaten now	Fetta is the best cheese for health, eaten daily but not too much Beneficial when eaten in large quantities Beneficial when eaten 3-4 times a week Beneficial eaten in large amounts in season, especially home grown because contains less pesticides and chemicals	VC VC VC VC
<i>Fruit</i> eaten only in season in large quantities, not eaten daily all year round, overall not much fruit eaten, mainly grapes, figs, watermelon, canteloupe. <i>Pikled Vegetables</i> , pickled in salt & vinegar in summer for winter (due to lack of refrigeration), eaten in large amounts <i>Bread</i> (wholemeal) eaten in large amounts every day <i>Pasta</i> eaten 2-3 times a week <i>Olives</i> eaten in large amounts daily Olive oil eaten in large amounts daily; butter, vegetable oils, not eaten <i>Cooking methods</i> , foods were stewed/casseroleed i.e foods eaten "wet" <i>Religious fasts</i> , animal products avoided for 40 days before Easter, Christmas, 15 days in August and June	More fruit eaten on a daily basis Less eaten Less bread eaten, mainly white Less than once a week Less eaten Olive oil replaced with vegetable oils, butter & margarine on bread Stew/casserole replaced with barbecues, grills, roasts, more "dry" foods The duration of the fast reduced	Rarely eaten Less bread eaten, white & wholemeal Eaten once a week Eaten 1-2/week (about 20 a week) Vegetable oils replaced with olive, nothing spread on bread More casseroles eaten, but barbecues still very popular, as well as grills/roasts. Fasts rarely last more than 7 days	Beneficial when eaten only when in season, eat in moderation, not essential for health. Improved refrigeration enabled us to avoid these, salt not good for health Beneficial. need > 4 slices daily, foundation of life Beneficial. need to eat 1-2 times a week Beneficial. eat at least 5 olives, daily Olive oil is superior to all other oils; margarine not good for health Barbecues not good for health, best to eat "wet" foods as stews/casseroles Very beneficial to fast animal foods for as many days as possible	C C VC C VC VC VC VC

¹VC = very common, belief held by > 75 % of subjects, C = common 50-75 % of subjects,

LC = less common 25-50 % of subjects, UC = uncommon 1-25 % of subjects.

Chamomille (Matricaria chamomilla)

Belief: Is claimed to cure over 100 illnesses. Drunk as a tea to treat stomach upsets, colds, dysmenorrhoea, hypertension, constipation and colic in babies (only 1-2 teaspoons before bedtime). Should drink 1 cup daily to keep body in good health. Also put on skin; boiled in olive oil or kept in sun in oil for 1 month and put on skin to prevent wrinkles or rubbed into joints of a baby to strengthen joints.

Evidence: Contains matricine (antitumour), bisabolols (anti-inflammatory, anti-ulcer), rutin (hypocholesterolemic, diuretic, antithrombogenic), coumarins (hypoglycemic). Dose required to treat conditions not scientifically established. Very safe (30, 31).

Aniseed (Pimpinella anisum)

Belief: The seeds are drunk as a tea. Used to treat colds, colic and insomnia in babies (1-2 teaspoons before bedtime).

Evidence: Contains phytoestrogens, coumarins (hypoglycemic, anti-inflammatory), creosol (antiseptic), antihistamine, anethole (carminative). Scientific evidence lacking on its use, safety and dose required (30, 31).

Conclusion

The inclusion of a qualitative anthropological approach in this study has helped to explain health related behaviours found in the elderly Greek populations surveyed, which may have otherwise gone unnoticed if data gathering had been strictly quantitative. Quantitative surveys alone, whether socio-economic or nutritional/dietary, are not enough to give the complete picture of the reasons why the behaviours exist. An important approach is to distinguish between food habits information, as quantitative data, and "food beliefs", which help explain why the food choices were made and the constraints on their improvement, even where there is a knowledge base for modification. If the Greek community were to be targeted for health promotion and prevention, their beliefs would have to be taken into consideration in order to facilitate programme implementation. Moreover, further research is required to explore the scientific basis for those beliefs deeply ingrained in the Greek culture and which have withstood the test of time.

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