Changes in Food Preferences during Aging

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Key Words
Food preferences • Nutrition behavior • Food trends • Sociocultural framework

Abstract
Due to the increasing proportion of the elderly in the European Union knowledge of health and nutritional status has to be complemented by studies focused on food preferences and health behavior. A comprehensive literature review has been conducted. The state of the art documents a gap in understanding why differences exist between food knowledge, attitudes and practices. Inadequate attention has been given to cultural factors. Research into the reasons for nutrition behavior and food choice is of key importance for the future.

Background/Aims
The population of industrialized countries is aging. From 1960 to 2000, the average life expectancy at birth for EU-15 rose from 70 to 78 years. Between 1960 and 2004, the proportion of older people (65 years and over) in the population has risen from 10% to almost 17% in the EU-25. All the signs indicate that this trend will continue well into the new century. The proportion of people aged 65 and more in the total population is expected to rise in the period until 2050. The population in the EU-25 is expected to increase from 16% in 2004 to 30% in 2050 or from 75.3 million in 2004 to 134.5 million in 2050. The largest shares of elderly people in 2050 are expected in Spain (36%), Italy (35%), and Greece (33%), and the lowest in Luxembourg (22%), the Netherlands (24%) and Denmark (24%). The growth of the population aged 80 or more will be even more pronounced in the future as more people are expected to survive to higher ages [1].

These demographic changes present challenges to health care, food supply systems, and nutrition services for older individuals. Due to the increasing aging process in the European Union the knowledge of health and nutritional status as well as of the nutritional behavior and food preferences might help improve the quality of life in the third and fourth life span.

Aging is often associated with a stage of life accompanied by illness and frailness, but this stereotype is not correct. The aging process itself changes. Speaking about older people, it has to be kept in mind that the target group is very heterogeneous, covering a broad span from young and fit older persons to very old and ill people with diverse living conditions and lifestyles. In social science the situation of the elderly is characterized by the following criteria: rejuvenation, long period of retirement, living alone and feminization [2].

The striking increase in life expectancy reflects that a 70-year-old today is not the same as a 70-year-old 50 years ago when life expectancy was about 10 years lower.
Rather, the 70-year-old person today is more like a 60-year-old person two generations ago.

Nowadays, the perception of aging has changed towards the potentials and resources of older people [3].

**Methods**

A comprehensive literature review, which has been part of the European 'Nutri-Senex-Project', has been conducted by the authors focusing on socioeconomic, psychosocial and cultural research aspects. The results have been discussed in expert groups within the network of Nutri-Senex as well as with external scientists.

This article concentrates on independently living, healthy older people and does not comprise research results and recommendations regarding institutionalized older people.

**Results**

*Food Choice and Nutrition Behavior*

Food preferences result in specific food choices, which are part of everyone's individual nutrition behavior. Food preference is used to express choice: an indication that amongst two or more alternatives presented together in a given time and context, certain options are more desirable than others [4].

When growing older a lot of factors influence food preferences and therefore food choice is determined by the changes in the chemosensory perceptual systems (e.g. altered taste and smell), medical problems and illnesses, dental state, etc. However, lifestyle, socioeconomic situation and other social and psychological variables may limit the influence of physiological changes and help to maintain an adequate food intake.

Pioneering investigations by Kurt Lewin theorized that food choice and nutrition behavior were complex processes involving cultural, sociological and psychological factors that varied within individuals and had different strengths among various groups of people and for different foods. Lewin's work laid a foundation for further use of social science theories to examine the details of food choice [5].

The food choice process model shows the complex chain of factors related to food choice and food preferences (fig. 1) [6].

Factors important in food choice include taste, health, convenience, price, and traditional beliefs. The model consists of three major components: the life course includes personal roles and the social, cultural and physical

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**Fig. 1.** Food choice process model [6].
environments to which a person has been exposed. The life course of the individuals forms the basis for the operation of influences affecting food choice. Influences include ideals, personal factors (the needs and preferences based upon physiological and psychological characteristics), resources, social framework (interpersonal relationships and social roles associated with food choice) and food context (the physical surroundings and cultural environment of the food choice setting). These influences shape and develop an individual’s personal system for making food choices that includes a value negotiation process and a set of strategies.

Among a sample of older adults, the most apparent values were sensory perceptions, monetary considerations, health/nutrition, convenience (time and effort) and managing relationships (interpersonal interactions).

This model can help to identify and explain food preferences. It seeks to explain habitual and unconsciously ongoing food preferences [5].

Nutrition behavior and eating habits are formed during childhood (e.g. through nutrition education and behavior of parents) and are often retained for a lifetime. Behavior that has once been implemented is very hard to change in older age [7]. Especially when investigating nutrition of older persons it has to be kept in mind that they already have undergone a long period of eating and implementing nutrition behaviour during their whole life course and food habits have never changed so fundamentally and rapidly as during the past 50 years.

People who nowadays belong to the age group of the elderly have experienced food insecurity and a limited variety of food in their childhood and youth during the Second World War. Now for many of them improved welfare means ‘better’ food represented by higher consumption of fat and sugar [7].

There are only few studies dealing explicitly with food preferences and nutrition behavior from a social-scientific point of view. This paragraph shows exemplarily research results focused on food preferences and nutrition behavior.

In the United States, a qualitative study focused on food choice of the elderly found the following food choice components as important shaping factors:

Of all periods in the course of life, childhood played a highly significant role in food choice decisions. Ideals and social frameworks emerged as the most prominent of the influences on food choice among the interviewed elderly. Older people have been found to keep to old customs. All participants had strongly held ideals about what meals, foods, and healthy eating should be, and the complexity of this influence was seen in the wide variety of concepts that emerged from the data analysis. The social framework of the older persons in most cases guided their food choices. Almost all of the elderly in this study sought food activities as a means for companionship brought on by the social context, and, once in the social context, the participants generally ate what was served. Living in an isolated situation, loneliness and depression are factors influencing nutrition behavior in a negative way. Managing social contexts was the value most successful in overruling sensory perceptions in many value negotiations, particularly where managing the relationship between spouses or friends in a context was valued often over a person’s own taste preferences [5]. The ‘food in later life project’ confirms the importance of social aspects in food choices. Both women and men appreciated being together at the table. For women entertaining family members, and also friends, with tasty food is the goal for cooking [8].

In a qualitative study on biographical factors influencing eating behavior in Germany, different ‘eating types’ and ‘habits’ have been found in a sample of women aged over 65 years. These eating types were only changed in the event of marriage to a partner with another eating type, or in the case of illness or fear of adverse health implications. However, these eating types were based on childhood socialization, which was for all participants either conservative/authoritarian or liberal. Eating times of the women could be characterized as ‘8 a.m. to 12 a.m. to 8 p.m.’ pattern. It seems that older women eat more frequently than men, usually 3 main dishes per day. Lunch has been identified as the most important meal to this population group and is usually eaten around 12.00 p.m., takes approximately 30 min to prepare and another 30 min to consume. Homemade dishes are generally preferred by the elderly and social support and delivery services like ‘Meals on Wheels’ are rarely used until it is no longer avoidable [9, 10].

Similar results have been obtained on a European level in the Health-Sense study which examined the attitudes to diet and health of adults aged 55 years and over [11].

Volkert [12] discussed the great variation in nutrition and lifestyle across Europe and the different food patterns between Northern and Southern European countries determined from the SENECA (Survey Europe on Nutrition in the Elderly) study. As expected, there are important differences in nutrition behavior in Europe between northern, southern, eastern and western countries.
Food patterns in southern countries were characterized by high intakes of grains, vegetables, fruit and lean meat and olive oil, whereas elderly people in northern countries consumed more milk products and more often reported the use of nutritional supplements.

'Best Ager' and Food Trends

Research results of food preferences can also be of value for the food industry. Nowadays the increasing number of Europeans aged 65+ present diverse target groups for industry and marketing in most industrialized countries. In Germany, as in many Western European Countries, the so-called ‘Best-’ or ‘Perfect-Agers’, or ‘Silver Generation’ are a customer group with a high spending capacity that will change business structures substantially until the year 2035. In contrast to previous generations, ‘Perfect Agers’ are rather mobile, active and pleasure seeking and their shopping behavior can be characterized by an enjoyment of consuming, quality orientation and brand loyalty. Results of the German Survey of Income and Expenditure confirm age-related differences in consumption, e.g. seniors aged 75+ spend twice as much money on healthcare products, but only half as much on transport and travel as 20- to 49-year-old persons [13].

Studies of food expenditure show that older people spend less money and a smaller percentage of their food budget on food away from home, although other studies predict the aging population to be an interesting consumer segment for the restaurant business in the future. Single, elderly households could be demanding smaller or single-serving packages in the future, which cost more per unit of edible food but which also have the important factor of being convenient. The demands for convenience and services in form of food might increase, i.e. services in the form of food packaging, ready-to-heat or ready-to-serve food, meals eaten away from home and meals delivered to the home. But today gathering around the table and sharing a home cooked meal is still a dominating behavior in Europe [7].

Young seniors in industrialized countries are open-minded for new experiences and interested in adopting new trends like wellness, fitness or 50plus products. This target group is interested in changing food preferences and purchasing innovative products, which they often can afford because of their good socioeconomic conditions [7, 14].

Conclusion

A better understanding of the factors that contribute to modified food preferences during aging could increase the development of appropriate strategies to improve the quality of life of people living in the third and fourth life span. The demographic changes of European countries
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Food choice, like any complex human behavior, is influenced by many interrelating factors, including various physiological, social and cultural factors. Therefore, the need of a comprehensive behavioral approach for further research is evident (fig. 2).

The model shows the determinants of nutrition and consumer behavior in the context of environmental and life-cycle variables. It includes environmental as well as individual factors which lead to special food choices depending on the supply of the market. The outcome of this process is the satisfaction of individual needs [15].

The following research gaps have been identified:

- Attitudes, values and experiences of eating and drinking in the context of the biographical background of older people.
- Shopping behavior in later life: impact of mobility, infrastructure, package design and marketing.
- Possibilities of age-based strategies for the implementation of existing nutritional recommendations; if it is necessary to change food habits in old age because of health aspects, how can it be done?
- Studies on gender differences in nutrition behavior and food choice.
- Cross-cultural studies on nutrition behavior and food choice of ethnic minorities in Europe.

In order to raise the quality of life in older age, nutrition education during the course of life is supposed to result in an improved diet and a better nutritional status. This can reduce costs in the health sector due to the prevention of nutrition related diseases, such as obesity, coronary heart disease and diabetes mellitus. In this context, health and nutrition policy should set up the framework for a successful translation of research results into action.

**Disclosure Statement**

The authors declare that no financial or other conflict of interest exists in relation to the content of the article.

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