Food in older men with somatic diseases
Eating habits and approaches to food-related activities

Kerstin Kullberg
Abstract

Food in older men with somatic diseases: Eating habits and approaches to food-related activities.

The overall aim was to improve the knowledge and understanding of eating habits of older men with somatic diseases, and the men's perceptions about managing food-related habits, such as grocery shopping and cooking. A total of 67 men between 64 and 89 years of age were visited in their homes on two occasions with 1-2 weeks in between. The participants were diagnosed with one of the three diseases Parkinson's disease, rheumatoid arthritis, or stroke. A food survey, with repeated 24-h recall, was used to assess food intake and meal patterns. Interviews with 18 participants were conducted with open-ended questions. The interviews were further analysed with a thematic framework approach.

The findings showed that eating events were distributed over a 24-h period. Further, co-living men had a significantly larger number of eating events over the day (p=0.001). No differences in daily energy intake were observed between co-living and single-living men. Co-living men's hot eating events were compared with those of single-living men more often cooked from fresh ingredients (p=0.001), including a greater mix of vegetables/roots (p=0.003).

Thematic analysis revealed three different approaches to food-related activities (FRA), namely ‘Cooking as a pleasure’, describing joy in cooking; ‘Cooking as a need’, indicating no habits or skills in cooking; and ‘Food is served’, that is, being served meals by a partner. The men's approaches to FRA were affected in particular by gender-related roles, but also by changed life circumstances, activity limitations, personal interests, and a wish to maintain continuity and independence. Further adaptive strategies were used among the men in attempts to maintain continuity and independence in FRA. In conclusion, single-living older men, especially those with activity limitations, were identified as being a vulnerable group from a nutritional perspective. Further, health care efforts in promoting FRA should preferably be individualised with respect to the older man’s approach to these activities.

Keywords: activities of daily living, arthritis rheumatoid, cookery, meal patterns, men, nutrition, older people, Parkinson disease, stroke

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List of Papers

This thesis is based on the following papers, which are referred to in the text by their Roman numbers.


II  Kullberg K, Björklund A, Sidenvall B, Åberg AC. ‘I start my day by thinking about what we’re going to have for dinner’: A qualitative study on approaches to food-related activities among older men with diseases. Submitted

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Abbreviations

<table>
<thead>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>EI</td>
<td>Energy intake</td>
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<tr>
<td>EE</td>
<td>Eating event</td>
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<td>Hot EE</td>
<td>Hot Eating Event</td>
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<td>Cold EE</td>
<td>Cold Eating Event</td>
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<td>FRA</td>
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Sweden, like all Western countries, has a large proportion of older people. Out of 9.2 million inhabitants, approximately 1.6 million (18%) are 65 years of age or older (SCB 2008). Even though the proportion of older women is higher, about 36% of all single-living persons aged 65 – 84 years are men (SCB 2008), which implies that men in this age group, as well as women, need to take responsibility for food-related activities (FRA) such as grocery shopping and cooking. This may give rise to a dilemma, however, as every-day cooking has traditionally been a woman’s sphere (Donkin et al. 1998; Ekström Pipping, L'orange 2001).

Differences between elderly co-living and single-living persons regarding food-related habits, e.g. the frequency of eating and specific food items included, have been examined in previous studies. It was found that persons living together more often ate two hot meals a day than those living alone (Kallio, Koskinen, Prättälä 2008). Further, co-living compared to single-living older persons used a wider range of fresh food in their cooking (Naska et al. 2006). Moreover, eating alone has been pointed out as a risk factor for a low energy intake (EI), especially among older men (Shahar, Shai, Vardi and Fraser 2003).

In Sweden during the last decades, older people, even those with somatic diseases, have tended to continue living in their own homes (The National Swedish Board of Health and Welfare 2009). However, ill health may affect the ability to perform FRA and hence the ability to maintain healthy eating. Previous research has shown that the prevalence of a chronic disease increases the risk of having an inadequate energy intake (Schroll et al. 1996). Three diseases that may lead to disability and thus affect the capacity to perform FRA are Parkinson’s disease, rheumatoid arthritis (RA) and stroke (Lorefält, Ganowiak, Wissing, Granéus and Unosson 2006; Pajalic, Karlsson and Westergren 2006; Westhoff, Listing and Zink 2000). It is therefore important to have knowledge about eating habits of older men with somatic diseases and these men's perceptions about how they manage FRA, an area which has rarely been investigated in research.
Older people and food

In the Western world the conventional meal pattern consists of three meals a day – breakfast, lunch and dinner (de Graaf 2000). Eating events that are not part of a meal have been designated snacks (de Graaf 2000; de Groot, Schlettwein-Gsell and Schroll-Björnsbo 1998). Previous research has shown that the energy intake from dinner decreases in higher age groups of men and women, while in men the energy derived from breakfast and snacks increases (Vincent, Lauque, Lanzman, Vellas, & Albarede, 1998). Further, older persons who have fewer snacks have been identified as having a lower daily energy intake (Shahar, Shai, Vardi and Fraser 2003). In an earlier study on Swedish older women and men it was found that meals and snacks, including beverages, were distributed all over the day (Rothenberg, Bosaeus and Steen 1994), and this was also found in a study compromising only Swedish older women (Andersson, Nydahl, Gustafsson, Sidenvall and Fjellström 2003).

Eating habits have been compared between older women and men in previous studies. In a study on older persons a low fruit and vegetable consumption was associated with being a male (Johnson et al. 1998). It was also found that in particular single-living older men consumed fruit and vegetables less frequently, and that their eating included a less varied mix of vegetables (Donkin et al. 1998). Moreover, compared with older women, older men tended to have their meals more often outside their home (Rothenberg et al. 1994).

In a study in the UK it was found that single-living older men are more likely than single-living older women to buy food that was easy to cook and to prepare (Donkin et al. 1998). Overall, men’s cooking skills have been found to be less improved over the years compared with those of women (Donkin et al. 1998; Bennett, Hughes, Smith 2003; Keller, Gibbs, Wong, Vanderkooy, Hedley 2004). However, the perceived need for help with cooking among men of ages 65 and older has significantly declined since the end of the 1990s (The National Swedish Board of Health and Welfare 2005). This implies that older men of today are more involved in cooking compared to men of the same age group fifteen years ago. On the other hand, grocery shopping has been pointed out as being problematic, in particular among older women. About 37% of women 80 years and older had help with grocery shopping from the municipality, compared to about 24% of men in that age group (The National Swedish Board of Health and Welfare 2005).
Diseases, disability and food-related issues

The present of chronic disease has been pointed out as a risk factor for low EI (Schroll et al. 1996). Furthermore, chronic diseases such as Parkinson's disease, RA, and stroke may affect the ability to perform FRA.

Parkinson’s disease is a progressive neurological disease with symptoms including tremor, fumbliness, rigidity, fatigue (Scott, Borgman, Engler, Johnels and Aquilonius 2000). These symptoms may affect the ability to eat and to perform food related activities (Andersson and Sidenvall 2001; Lorefält et al. 2006; Wressle, Engstrand and Granérus 2006). It was found in one study that even though energy intake and the time taken for resting increased, about 73% of the subjects diagnosed with Parkinson's disease lost body weight during one year (Lorenfält, Ganowiak, Pålhagen, Toss, Unosson and Granérus 2004).

Rheumatoid arthritis is a chronic, usually progressive systemic inflammatory disease affecting the connective tissue in the whole body (Kent and Matteson 2004). Painful inflammation in the joints and reduced grip force may lead to difficulties in eating and in performing food-related activities (Nordensköld, Grimby 1997).

Stroke causes neurological disabilities among adults and includes intracerebral or subachnoid haemorrhages, and cerebral infarctions (The National Swedish Board of Health and Welfare 2006). Eating difficulties, particularly at the onset of the disease, have been observed (Elmeståhl, Sommer and Hagberg 1996; Pajalic et al. 2006). Further, a need for assistance with FRA has frequently been reported among persons who have had a stroke (Hartman-Maeir, Soroker, Ring, Avni and Katz 2007; Pajalic et al. 2006). The importance of being able to prepare food for oneself has been found to increase in relation to the onset of stroke (Chiou and Burnett 1985).

Food-related activities

Food-related activities and eating can be regarded as essential components in the activities of daily living, as we eat several times a day and as over the years these activities provide structure and continuity to our everyday lives. Food activities are intimately connected with culture, expressed through norms, values and rituals (Fjellström, Sidenvall and Nydahl 2001). Further, every culture has it
own norms concerning what food is eaten, cookery, and rituals and behaviour in the meal situation. According to Fischler (1988), cookery is inseparable from culture, as it is in the culinary act that the passage from nature to culture is sanctioned. Hence, cookery helps to give food and its eaters a meaning, a place in the world. From this it follows that food is closely connected with an individual's sense of identity (Fischler 1988).

The continuity theory of ageing (Atchley 1999) describes the continuous adaptation of individuals to altered life circumstances throughout the course of life. Although factors such as eating preferences and cooking habits are continuously altered at a detailed level, older persons usually show consistency in their activity profiles and patterns of thinking over time. Thus, in the frame of reference of the continuity theory, ageing is regarded as a process in which the individual constantly adapts to personal and environmental changes. This implies that adaptation is one of the central concepts in the continuity theory (Atchley 1999). In this thesis continuity refers to the elderly men's food-related habits, including factors over time such as preferences, self-perception, and social relations (Atchley 1989); and adaptation refers to the means by which the participants coped with altered life circumstances and activity limitations due to disease.
Aims

The overall aim of this thesis was to improve the knowledge and understanding of eating habits of older men with somatic diseases and the perceptions of these men concerning management of food-related activities, such as grocery shopping and cooking.

More specific aims were:

To analyse the distribution and frequency of eating events and the associated energy intake, as well as specific food items, in older men with somatic diseases living in ordinary housing, in relation to their civil status (study I).

To address the question of how older men with somatic diseases living in ordinary housing approach the question of food-related activities. Further, any food-related adaptations consequent to effects of diseases and of altered life circumstances were investigated. (Study II).
Methods

Inclusion and subjects

Between November 2002 and June 2004, men aged 64 – 88 years, co-living and single-living, were invited to participate in the framework of the project 'Older men and food'. The men were identified from hospital registers and criteria for inclusion were: being diagnosed as having one of three diseases, namely Parkinson's disease, rheumatoid arthritis or stroke; living in ordinary housing; able to speak Swedish; and living in a specific county in central Sweden. Criteria for exclusion were: diagnosis of dementia; acute illness; severe aphasia.

Three hundred and twenty-six identified presumptive participants (IPP) were systematically listed in a random order (Fig. 1). Case records were examined and to further ensure correct inclusion/exclusion the lists of participants were examined in cooperation with care staff. An invitation to participate in the project was consecutively sent by mail to 137 older men with the three somatic diseases mentioned above. After 3-7 days the participant was contacted by telephone, and the study was presented in greater detail. If the man was interested in participating in the study, the day and time for the first home visit was decided. The telephone call also served to assess whether the participant met the inclusion criteria. Fourteen of the invited participants were excluded on the basis of exclusion criteria, or had died or were not attainable. Hence, 123 older men with somatic diseases were invited to participate in the project, of whom 56 declined; reasons commonly mentioned were: not interested and/or lack of time and tiredness. Thus, 67 older men with diseases were included in the project ‘Older men and food’. The inclusion rate (67/123) in the project was 55% (45% among co-living men and 60% among single-living men).
Figure 1. Flow chart of inclusion, exclusion, and drop-out of participants included in studies I and II.

*Study I* was based on data from 61 participants (35 co-living and 26 single-living) (Table 1). From 51 participants data were collected by the first author, and data from 6 and 4 participants respectively were collected by two co-researchers.

*Study II* was based on a purposeful sample of 18 participants (9 co-living and 9 single-living) included in study I (Table 1). The participants were recruited, on the basis of the following criteria: one of the three diseases, Parkinson’s disease, RA or stroke; civil status; and location of residence (urban vs. rural). Data were collected by the author for 17 participants and by a co-researcher for one participant.
Table 1. Overview of the participants included in Studies I and II. The numbers of participants in Study II are given in brackets.

<table>
<thead>
<tr>
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<th>Study I (II)</th>
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<tr>
<td></td>
<td>Co-living men</td>
</tr>
<tr>
<td>Age (mean yrs)</td>
<td>73.5 (71.1)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Parkinson's disease</td>
<td>12 (3)</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Stroke</td>
<td>12 (3)</td>
</tr>
<tr>
<td>All</td>
<td>35 (9)</td>
</tr>
<tr>
<td>Location of residence</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>26 (7)</td>
</tr>
<tr>
<td>Rural</td>
<td>9 (2)</td>
</tr>
<tr>
<td>All</td>
<td>35 (9)</td>
</tr>
</tbody>
</table>

Besides the three diseases required for inclusion, 47 participants included in study I reported having additional diseases, such as diabetes, cardiovascular disease, prostate cancer, impaired vision, and chronic obstructive pulmonary disease (COPD).

Data collection and analysis

All participants were visited on two occasions in their home, usually with an interval of two weeks. Demographic data concerning civil status, age, and location of residence were collected with a protocol. Further, the participants were asked whether they had home help services with food-related activities. An overview of the data collection methods used in studies I and II is shown in Table 2.
Table 2. Overview of methods for data collection used in Study I and II.

<table>
<thead>
<tr>
<th>Data collection methods</th>
<th>Study I</th>
<th>Study II</th>
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<tr>
<td>Demographic data</td>
<td>x</td>
<td>x</td>
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<td>Weight and height</td>
<td>x</td>
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<td>Food survey, 24-h recall</td>
<td>x</td>
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<tr>
<td>Qualitative interviews</td>
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**Study I**

At two visits to the participant's home, food recordings were made with the help of a 24-h recall, i.e. repeated 24-h recall (Gibson 2005). The participants were asked by the researcher, in as detailed a manner as possible, to describe everything, except for plain water, that they had eaten and drunk during the previous day and night. To help the participant to estimate portion sizes, a combination of household measures and ‘The Meal Model’ was used (The Swedish National Food Administration 1997). ‘The Meal Model’ is a picture book showing different dishes and portion sizes, including different types and sizes of bread. On a form, the researcher recorded the times of the eating events, their contents and components, and the amount of food eaten. Recipes and cooking methods were recorded, and in line with suggestions in earlier research (van Staveren, de Groot, Blauw and van der Wielen 1994), co-living participants were sometimes helped by a partner to recall and describe food consumed the previous day. A check-list of food items that are otherwise easy to forget was used, e.g., sweets, potato crisps, biscuits, alcoholic beverages. Thus home visits were made on weekdays; Fridays and Saturdays are not included in the material.

Using weights and portion sizes estimated by the participants, food intake data were coded and registered in the MATs nutrient calculation system (version 4.06) (Nordin 2002), which is based on the database PC-kost (2002:1), including about 1800 food items (Arnemo and Ohlander 2002). When weights were missing standard portion sizes in accordance with weight tables were used (Swedish National Food Administration 1999; Provkök, KF och ICA 2000), and when a food item was not included in the PC-kost it was replaced by a similar food item. When ready-made meals were registered into the PC-kost, food and nutrient information given on the packages was used.
The concept eating event (EE) stands for an occasion on which the informant had eaten or drunk anything, except for plain water. Meal patterns refer to the order and rhythm of EE. In line with Kjaernes, Ekström, Gronow, Holm and Mäkelä (2001) all the registered EEs were classified into one of three categories: Breakfast, Cold eating events (Cold EE), or Hot eating events (Hot EE). Breakfast refers to the first EE of the day, including more than a single beverage. The concept Cold EE includes a range of various types of eating events, e.g. yogurts, fruit, and sweets. A cold EE could include a hot beverage. Regarding the preparation technique snacks has been defined in line with cold EEs (Roos, Quandt and De Walt 1993). Hot EEs consists of either a lunch or a dinner, but could also be a second breakfast, e.g. porridge. Energy intake was calculated as the mean of the two days of data collection for each participant. The percentage distributions of specific food items included in breakfast, hot EE and cold EE was calculated, as was the number of EE during the two days of data collection.

The participant’s body weight and height were measured at one of the home visits, without shoes but with light clothes on. The data were used in calculating body mass index (BMI) and estimated basal metabolic rate (BMR\text{est}). BMR\text{est} was calculated with a formula for men >60 years (FAO/WHO/UNU, 1985). Besides this the ratio of the participant's reported energy intake (EI_{rep})/BMR\text{est} was calculated (Gibson 2005). The ratio can be useful in identifying the extent of underreporting at the group level (Gibson 2005).

The Statistical Package for the Social Sciences for Windows (12.01 ed., SPSS Inc; Chicago, IL, USA, 2003) was used for analysing data. When analysing differences between normally distributed groups, a t-test was used. When the data were not normally distributed, a non-parametric test, the Mann-Whitney \textit{U}-test, was applied. For comparing nominal data, the Pearson Chi-Square or Fisher’s Exact Test, two-tailed, was used. A p value <0.05 was considered significant.

Study II
To gain a deeper understanding of the participants' approaches to FRA qualitative interviews were conducted. For this purpose an interview guide was used including questions about whether, when and how the men participated in and managed food preparation and grocery shopping, including planning for the shopping and transportation to
and from the store. Further, the participants were questioned regarding changes in these activities and any adaptations of FRA necessitated by the disease and/or altered life circumstances. Additionally, the interviews focused on the participants' perceived experiences in relation to these activities. The interviews, which lasted for 45 to 120 minutes, were conducted as a dialogue around the themes in the interview guide in the participant's home at the first home visit. The recorded audiotape was listened to shortly after this home visit. The second home visit gave opportunities to ask complementary questions and to confirm earlier statements. All the recorded audio taped interviews were transcribed verbatim, including complementary questions to eight participants. In line with a “thematic framework” approach described by Spencer, Ritchie, & O’Connor (2003) and by Ritchie, Spencer, and O’Connor (2003) the transcribed material was analysed with the purpose of becoming accustomed to the material, all interviews were listened to and attentively read several times. Subsequently the interviews were read one by one, and at the same time preliminary themes related to the aims of the study were noted in the transcripts. In the next step, similarities and differences within and between participants were identified and noted. In this process, described as analytical induction (Hammersley and Atkinson 1995), the analyses and interpretation moves forwards and backwards between the raw data and the preliminary themes. Hence, preliminary themes describing the participants' approaches to FRA are refined and distilled. In the final step, the whole data set was checked once again, with the aim of discovering patterns and explanatory factors (Ritchie et al. 2003) for change and maintenance in FRA approaches over time.

Ethical considerations
This research was designed and implemented in accordance with the ethical principles for research in humanities and social sciences (Swedish Research Council 2002). As the data collection took place in the participant's home, demands on integrity of the men's privacy had to be highly respected. The Committee of Research Ethics at the Medical Faculty, Uppsala University, Sweden approved the study on June 25, 2002.
Results

Summary of the results Study I

Sixty-one participants, older men with somatic diseases, were included in Study I, 35 co-living and 26 single-living. There were no differences between co-living and single-living men with respect to age, weight or BMI. The mean age of the co-living participants was 73.5(±5.4) years and that for single-living 74.9(±6.9) years. The group of co-living men had a mean weight of 78(±10)kg and a mean BMI of 25.4(±3.6), and the corresponding figures for single-living men were 79(±13) kg and 26.1(±3.8) respectively. Four single-living men received meals-on-wheels 2-7 days/week, and one co-living man and four co-living men received formal support with cooking or with heating up food.

The reported mean EI/day was 8.5±2.8 MJ (2038±663 kcal) in co-living men and 7.5±1.9 MJ (1794±450 kcal) in single-living men. There were no differences\(^1\) between co-living and single-living men with respect to EI/day, but nonetheless co-living men had a larger number of EE/day \(5.1±1.4\) compared to single-living men \(3.9±1.1\) \((p=0.001)\)\(^2\), including a larger number of hot EE (co-living men \(1.5±0.5\) and single-living men \(1.3±0.4\)) \((p=0.044)\)\(^2\) and cold EE (co-living men \(3.6±1.4\) and single-living men \(2.7±1.1\)) \((p=0.010)\)\(^2\).

At almost all times of day both co-living and single-living men reported EE. Breakfast was mostly eaten at about 8 a.m. to 9 a.m. in both groups, and there was a hot EE between 9 a.m. and 8 p.m. Both co-living and single-living men could have a hot EE in the morning, i.e. a second breakfast, e.g. porridge. However, the distribution differed between co-living and single-living men in that co-living men had peaks of hot EE at lunchtime and at about 6 p.m. to 7 p.m., while single-living men had a hot EE peak around lunchtime and a more even distribution of hot EEs from 3 p.m. to 8 p.m. Both co-living and

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\(^1\) Two sample T-test

\(^2\) Mann-Whitney U-test
single-living men had cold EEs from early morning until late at night, and both groups had a peak of cold EE at about 8 p.m. With respect to EI, cold EE ranged from 4.2 KJ (1 kcal) to 6.13 MJ (1465 kcal). A cold EE at night often consisted of fruit or a sandwich.

Co-living and single-living men had almost the same food items in their breakfast, i.e. spread/fatty sauce, cheese, milk products, bread, porridge/cereals, jam/marmalade, sugar, and coffee/tea.

Food items often included in hot EE were spread/fatty sauce, milk products, bread, potatoes, vegetables/roots, meat, and alcoholic beverages. Regarding food items included in hot EEs it was found that compared with single-living men, co-living men more often (p=0.012)\(^3\) ate porridge/cereals as a hot EE, i.e. a second breakfast or a light lunch. It was also clear that co-living men had a greater mix of vegetables in their hot EEs (p=0.003)\(^3\). In both groups of men spread/fatty sauce, milk products, bread, fruit/ juice, buns/biscuits, sugar and coffee/tea were often included in cold EEs. Single-living men had more often spread/fatty sauce (p=0.033)\(^3\), milk products (p=0.049)\(^3\), and bread (p=0.014)\(^3\) in their cold EEs. Further, co-living men more often had their hot EE cooked from raw material (p=0.001)\(^3\), while single-living men more frequently used convenience food in their cooking (p=0.001)\(^3\). In addition single-living men more often (p=0.031)\(^3\) had a hot meal outside their home, e.g. at a restaurant or at the home of a friend.

Methodological considerations, Study I

Although the sample size was relatively small from a statistical point of view, highly significant differences were found in respect to eating habits between the co-living and single-living groups of older men. It may be assumed that a larger sample size would have given the study more power and thus an opportunity to detect additional differences between the two groups. The data collection was conducted with a 24-h recall performed on two occasions. However, a disadvantage is that this type of data collection relies exclusively on the participant's memory and conceptual skills (van Staveren, et al., 1994; Gibson 2005). The interviews were conducted in the participants' homes, which improved the reliability by giving the researcher opportunities to validate their statements by for example by looking at glasses and cups.

\(^3\) Pearson Chi-Square
In the present study the calculated mean value for $\text{EI}_{\text{rep}}/\text{BMR}_{\text{est}}$ was 1.31 for co-living and 1.15 for single-living men, indicating that low energy reporters were included. In an earlier study comprising home-dwelling elderly men the mean value for $\text{E}/\text{BMR}_{\text{est}}$ was 1.50 (Rothenberg, Bosaeus, Steen, 1997). The present mean $\text{E}$, however, was in accordance with values from earlier studies comprising older healthy men living in their own homes (Schroll, et al., 1996; Vincent, Lauque, Lanzmann, Vellas, & Albarede, 1998; Sharkey et al., 2002; Nes, Sem, Pederson, & Trygg, 1992; Schlettwein-Gsell, & Barclay, 1996).

Summary of the results, Study II
Among the 18 older men included in study II, seven co-living and six single-living men drove a car. Mobility devices were used by four co-living and three single-living men. Three single-living men received help with FRA from the municipality home help services, one single-living man had meals-on-wheels and two men were helped with grocery shopping. Three different themes, i.e. approaches to FRA, were identified among the participants: *Cooking as a pleasure*, *Cooking as a need*, and *Food is served*. The participant's approach was dependent on the individual's gender-related role to these activities, and the participant's skills and habits in performing FRA.

Participants with the approach *Cooking as a pleasure* described themselves as having both an interest and skills in FRA, and they found cooking a joy. These participants often said that they had taken up cooking a long time ago, and at the time of the interview some participants cooked almost all hot meals in the family. The time spent on cooking had sometimes increased in connection with retirement, a partner's serious illness or a divorce. Further, the importance of shared responsibility in FRA was often emphasised by the men with the approach Cooking as a pleasure. It could be assumed that FRA performances contributed to overall well-being among the men with this approach.

Participants with the approach *Cooking as a need* said that they had no skills or habits in FRA. These men looked for cooking alternatives, and convenience food was commonly used in their cooking. The men's inexperience and lack of competence in FRA sometimes appeared to be problematic, e.g. among widowed men. Participants with this approach did not usually plan a great deal before going to the grocery shop. Some men with the approach Cooking as a
need seemed to have no interest at all in cooking, and for them cooking appeared to be more or less a necessity for “survival”.

Participants with the approach *Food is served* were mostly co-living, and thus were served meals by a female partner. Most of the participants with this approach lacked both skills and habits in preparing food. Although they were served meals, the men usually said that they carried out some household tasks like laying the table or washing up. The participants usually went grocery shopping with their partner, but it was always the women who wrote the shopping list and decided what to buy. Most of the participants with the approach Food is served were happy to be served meals by their partner.

To adjust to activity limitations, three main adaptive strategies were used among the men, namely *Physical reorganisation*, *Interaction with others*, and *Passively attended*. Further, the participants sometimes changed their approach to FRA in order to adapt to altered life situations such as a changed civil status and/or activity limitations due to disease. The extent to which the men maintained continuity in FRA was dependent on how well they managed to adapt to activity limitations and any altered life situations.

The adaptive strategy *Physical reorganisation* included actions such as optimising, simplifying and modifying performances in FRA. In particular, single-living participants with the approach Cooking as a need simplified cooking by the use of a large amount of convenience food. Further, an ability to drive helped participants with a disability to stay independent regarding grocery shopping.

Some men used the adaptive strategy “*Interactions with others*”. In contrast to single-living participants, co-living men had an opportunity to be assisted in performing FRA by their partner. Some single-living men, even when disabled, wished to maintain continuity and independence in FRA, and for that reason accepted just minimal help from the municipality in FRA.

Although not able to do any shopping, one man who was severely disabled from RA, said he enjoyed going to the shop together with his partner; just *Passively attending* to savour the atmosphere.

It was found that the men's approaches to FRA were affected, in particular, by gender-related roles, but also altered life circumstances, activity limitations, personal interests, and a wish to maintain continuity and independence.
Methodological considerations, Study II

With the purpose of guaranteeing the quality of the data collection, several procedures were carried out. The participants were selected with the purpose of ensuring satisfactory data variability in the three areas of inclusion, diseases, civil status, and location of residence. The interviews were conducted as a conversation, using open-ended questions in the participant's home at two home visits, which strengthened the reliability. Further, in the interview situation the participants were given a great deal of time to express themselves. To guarantee the documented quality the tapes were checked by one of the co-authors. In line with Hammersley and Atkinson (1995), and with the purpose of ensuring the credibility of the findings the analysis process involved ongoing comparisons between and within the interviews. In views of the reliability of the description of the research process and findings, the results should be transferable to similar contexts in the research area and to older men with other chronic diseases (Lewis, & Ritchie, 2003).
Discussion

Food-related activities and gender

The findings (study II) showed that gender related roles had an overall influence on older persons’ performances in FRA. Further, it was found, not surprisingly, that older men who lived together with a female partner had healthier eating, e.g. higher frequencies of EE per day and a greater variety of vegetables in their hot meals, compared to men who were living alone (study I). Thus it could be assumed that the healthy eating habits of the co-living men were a result of their partner’s cookery. These findings are consistent with an earlier report indicating that partnership has positive effects on the eating habits of co-living older persons (Naska et al. 2006). It has also been shown that in Swedish families with persons 60 years and older, it is the women who usually do the cooking (Ekström Pipping and Fürst L'orange 2001). For older women cooking is an expression of a wish to care for their families (Gustafsson and Sidenvall, 2002; McKie, McInnes, Hendry, Fonalnd and Peace 2000; Sidenvall, Nydahl and Fjellström 2000).

The current results showed that older men with somatic diseases had different approaches to FRA (study II), described here as Cooking as a pleasure, Cooking as a need, and Food is served. These approaches were shown to be associated with gender-related roles and civil status (study II). Men with the approach Food is served were all living in partnership and with a traditional division of labour in FRA, whereas men with the approach Cooking as a need were all single-living, and had previously been living in partnership with traditional gender roles in FRA. Some of them had pronounced difficulties in managing FRA on their own. Consequently, living in partnership with a traditional division of labour in FRA may be related to a risk of future food-related problems among older men, if for example the female partner becomes seriously ill. Some widowed men, in
particular showed difficulties in managing FRA on their own (study II). Similarly, it was found in a previous study that men who unexpectedly became single, commonly found themselves helpless in respect to FRA, with no skills to provide themselves with the diet they wanted to eat (Sydner, Sidenvall, Fjellström, Raats and Lumbers 2007). In another study, including both men and women, it was shown that habits changed in connection with widowhood, in that frequencies of home-made food and the number of snacks per day decreased (Shahar, Schultz, Shahar and Wing 2001).

It can be assumed that among older persons gender roles in FRA are well established, in particular after a long life in partnership, and that these patterns are therefore not easily changed. The men's performance and sometimes non-performance in FRA (study II) indicated that there is a reciprocal interplay in these activities between the man and his female partner. This interplay appeared to maintain gender-related roles in FRA, and thus the older men’s approaches to these activities, which is in accordance with the findings of Fürst L’orange (1997) who concluded that women's cookery, beyond the duty to care for the family, is also strongly associated with female identity. Hence, it would seem that in the traditional gender-related roles of FRA, it is a long-engrained habit for the man not to interfere too much in the 'women's sphere', but to value her cookery and to appreciate her as being the 'chef' of the family.

Nutritional aspects

Single-living older men were identified as being a vulnerable group from a nutritional perspective (study I). Although no differences were found between co-living and single-living older men regarding daily energy intake, co-living men had higher frequencies per day of both hot EE and cold EE. Nevertheless, most of the older men (study I) followed The Swedish National Food Recommendations (SNR) (The Swedish National Food Administration 2005) concerning the meal pattern, i.e. 3 meals a day and with 1-3 snacks in between (4-6 eating events per day). According to SNR a lunch may also be a cold meal, for example yogurts, cereal, bread, cheese. However the SNR are validated for healthy persons, while the men studied in this thesis were diagnosed with diseases that may affect eating and FRA performances. Thus, it should be considered whether recommendations validated for persons with diseases would be more appropriate for some of these
participants. The recommended meal pattern for persons with diseases is three meals a day with three snacks in between (The Swedish National Food Administration 2003). Some single-living men included in the present research had just one hot EE per day, and some of the men had no or only 1-2 cold EEs per day (study I). Earlier research has shown that the relative contribution of snacks to the daily EI is dependent on the frequency of the consumption (Haveman-Nies, de Groot and van Staveren 1998; de Graaf 2000; Shahar et al. 2003; Hampl, Heaton and Taylor 2003).

The present findings indicated that the lack of skills and habits in FRA of some single-living elderly men could result in extremely simplified cooking (study II). The large supply of ready-made meals in the grocery shop was a help for these men to manage cooking independently even when they had activity limitations. In 2002, Sweden had the second highest consumption of chilled ready meals in Europe (Olsson 2003). A negative aspect of this may be that malnutrition among older men may proceed undiscovered over a long period of time without being observed by the municipality or the health care services. In an earlier study protein-energy malnutrition was found in 29% of the residents entering municipality care from their own homes (Christensson, Unosson, and Ek 1999).

Some of the participants included in this research had activity limitations as a consequence of their disease (study II). However, owing to the statistically relatively small sample size, differences between eating habits of co-living and single-living men were not investigated in relation to the prevalence of the men's activity limitations. Thus, based on the current results it is not possible to draw conclusions concerning the relative effects of the men's civil status and their activity limitations on their eating habits. However, in a Finnish study in which meal patterns of older persons were investigated, it was found that single living had a negative affect on the conventional meal pattern (three meals a day), while this was not affected by the prevalence of functional disability (Kallio et al. 2008). Comparable results were found in a study of meal patterns among older Swedish women (Andersson et al. 2003), in which it was shown that disabled women had the same meal pattern as those who were managing on their own.
Food-related activities and self-esteem

Older men with the approach Cooking as a pleasure, also when single-living, were interested in and enjoyed spending time on FRA (study II). Motivation to take on cooking has previously been emphasised as a contributory factor in maintaining a healthy diet among single older men (Hughes, Bennett and Hetherington 2004). Hence, it could be assumed that older men with the approach Cooking as a pleasure, also when single-living, managed to maintain healthy eating. Apparently FRA implied a feeling of well-being among these men and thus probably contributed to the men's overall life satisfaction. This conclusion is in line with findings in a Finnish study on middle-age men (Roos, Prättälä and Koski 2001), indicating that among those who regularly cooked, cooking contributed to life satisfaction. Further, the ability to maintain familiar activities in one’s own home, has earlier been associated with a high degree of life satisfaction, and in prompting subjective health among older persons (Åberg, 2008).

Men with the approach Cooking as a pleasure had usually performed FRA for a long time, providing themselves and their families with meals (study II). Thus, it could be speculated that FRA, and in particular, cooking contributed to the self-esteem of these men as being a competent person. With reference to the continuity theory an individual's self-esteem is closely connected to his or her success in maintaining inner structures such as experiences, preferences, and skills (Atchley 1989). Hence, the self-esteem of an elderly person relies on the ability to adapt to any changed life circumstances and can thus be increased either by a successful adaptation or by reduced expectations, or both (Atchley 1989). In study II it was found that three adaptive strategies were used, in particular among older men with activity limitations. Besides helping the men to maintain continuity in FRA and provide themselves with meals, these strategies probably also helped to maintain their self-esteem as being competent and self-managing persons. Further, it could be assumed that some of these men reduced their expectations in performing FRA in favour of a successful outcome and thus preserved self-esteem. These interpretations are consistent with earlier research in which it was found that receiving help in household tasks was associated with loss of self-esteem, in particular among older men (Coleman, Ivani-Chalian and Robinson 1993).
Conclusions

Single-living older men with somatic diseases appear to be a vulnerable group from a nutritional perspective, whereas healthier eating among co-living men may be a consequence of their partner's cooking (study I).

Gender roles in particular, but also civil status, personal interests, and skills and habits influence older men's performances in FRA (study II).

Older men with diseases show three different approaches to FRA, namely Cooking as a pleasure, Cooking as a need, and Food is served. (study II).

Older men with activity limitations use adaptive strategies, namely Physical reorganisation, Interaction with others, and Passively attended, with the purpose of maintaining continuity and independence in FRA (study II).

Single-living older men, who have previously lived in partnership involving traditional gender roles in FRA, are a particularly vulnerable group from a nutritional perspective, and they may have difficulties in providing themselves with a healthy diet and food that they like (studies I and II).

To promote healthy eating among older men with somatic diseases, dietary advice should preferably be given in respect to their eating habits and meal patterns, but also to their approaches to FRA (studies II and II).
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