Transitions in Kitchen Living
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Key Findings

The Past

• Oral histories of the kitchen beginning in the 1920s, 30s and 40s show that space, storage, equipment, tasks, meanings, social etiquette and adaptation were central concerns and still impact on present everyday living.

• Gender, socio-economic status, culture and generational difference influence past narratives.

• History of architectural design is an important determinant of kitchen space.

The Present

• The contemporary kitchen is a place of both instrumental and social activity for older women and men. Certain activities, skills and routines imbue meaning and support identity.

• Participants in their 60s and 70s were more independent than those over 80 years, the majority of whom were living alone.

• Supportive housing commonly includes fitted and galley kitchens, which are often limited in space.

• Participants discussed problems with reaching, bending, hearing, seeing and dexterity in the kitchen; poor lighting was common. All these factors are important considerations for improved ergonomic design.

• Person-environment fit is often maintained through on-going adaptation in the kitchen; yet people sometimes lack information or the capacity to make small changes or to cope with new equipment, installation or building work.

• Problems can often be addressed with small low cost adaptations, but greater benefits may be obtained from a redesigned inclusive kitchen. Ageism in design needs to be challenged.
Background

For people of all ages the kitchen can be the hub of the home and a centre of person-environment interaction. Researchers from many disciplines have studied both institutional and domestic kitchens: Social scientists are concerned with cultural history; the gendered nature of domestic space; the routines and rituals associated with everyday activities, and the coming of technologies. Biologists and food scientists are interested in dietary and eating practices, hygiene and nutritional state. Architects, designers and ergonomists are concerned with the design, spatial configuration and efficiency of functional space.

Yet what do we know of older people’s experience of the kitchen? Previous evidence has been limited. For the New Dynamics of Ageing programme, the kitchen provides a laboratory for focusing on ageing within the built environment and how autonomy and independence are enabled or disabled through personal history, current health and well-being, and design and technological intervention. Examination of these issues can lead to outputs which have practical value to older people themselves, as well as family members, designers, practitioners and the wider retail sector.

Aim and objectives

The lack of integrated multi-disciplinary research concerning kitchen living in later life forms the rationale for this project. The overall aim was to investigate the experience of the kitchen for people currently in their 60s, 70s, 80s and 90s living in a variety of mainstream and supportive1 housing in England. The project had a number of objectives to:

- Provide historical and contemporary understandings of the material, social and psychological aspects of kitchen experience guided by life events and examining role, function and design.
- Consider person-environment fit through the juxtaposition of individual health and well-being, practical aspects of kitchen living and the potential for improving the kitchen to meet older people’s needs.
- Extend theoretical development in environmental gerontology through a focus on kitchen living.

The Future

- Research testing older people’s attitudes to kitchen technology shows that at present issues relating to personal safety are more important than facilitating everyday activity as health changes.
- New technologies such as motorised worktops, automatic appliance shut off, small print readers on packaging and, more futuristically, smart fridges that report shopping needs and place orders could facilitate current coping skills.
- Lack of awareness of technical possibilities and doubts about their feasibility were apparent.
- Key issues raised have implications for ways of thinking about theories of environment and ageing.

Some things are too far

Some things are too high

1 ‘Mainstream’ housing included all types: detached, semi-detached, terraced, maisonettes, bungalows, high and low rise flats. ‘Supportive housing included: sheltered housing, extra-care housing and retirement housing and apartments. In supportive accommodation participants had their own kitchen but could eat communally if they wished. Care homes were not included as meals are usually taken communally.”
• Develop methodological systems for triangulation of data that are historical and contemporary; individual and contextual; qualitative and quantitative.

• Develop an archivable resource of research data of value to the lay public, practitioners, kitchen designers and academics that contributes to an understanding of user requirements for inclusive kitchen design or adaptation.

Approach and Method

The research was both collaborative and multidisciplinary, involving social gerontologists from the Faculty of Health and Social Care at The Open University and ergonomists at Loughborough University’s Design School. By setting out to research experiences of past and present kitchens, detailed pilot work was undertaken involving five older people ranging in age, gender, ethnicity and accommodation to develop a comprehensive mixed methods approach.

In the main study two interviews were held with each of the 48 participants during 2009-10 alongside other data collection. The first interview gathered an oral history of kitchens experienced across the life course, informed by a housing history record and a life event guide, e.g. first remembered home, parental home when a teenager, independent living.

The second semi-structured interview focused on the present kitchen, how well it met the person’s abilities and needs and any coping strategies they adopted. It contained both multiple choice and open-ended questions. The interview also considered the person’s health and well-being as well as their activities. It covered aspects such as physical abilities (mobility and dexterity), sight, hearing etc., whether the person cooks, what they like to eat and then discussion about difficulties completing various tasks such as cooking, washing, ironing, recycling and feeding pets. Prior to this meeting self-completion records of routine kitchen activities and basic demographic information were collected.

Sketches were made of the kitchen layout; photographs taken of interesting features, solutions, compromises, and problems as directed by participants and measurements recorded to calculate the kitchen ‘work triangle’ and kitchen area. Measurements were also taken of the height of the lowest cupboard shelf to consider accessibility. Light level measurements were taken in three particular locations: at the kitchen sink, where food was prepared and where food was eaten, e.g. at the kitchen table (where appropriate). These were recorded both with the kitchen lights on and off.

Full ethical approval was sought and gained from both institutions prior to the research being undertaken. The team had several face-to-face meetings to plan the study, share skills and to conduct piloting, e.g. a gerontologist leading a pilot oral history interview with an ergonomist observing, and then reversing the roles for the current kitchen interview. Research analysis was undertaken collectively.

Participants

The research involved a purposive sample of 48 people living in urban and semi-rural areas of Bristol and Loughborough. The participants were chosen to meet specific criteria based on age, housing type and gender. The age range was deliberately chosen to include people in their 60s through to their 90s to encompass the sociological categorizations of the ‘third’ and ‘fourth’ ages and to consider the impact of age on design issues. The participants were recruited across three age groups, 60–69, 70–79, and 80+, with 16 people in each group. There were 31 female participants and 17 males see (Table 1), reflecting the gender ratio in later life. Dates of birth for the whole sample ranged from 1919 to 1948.

Table 1: Age and gender of sample (N=48)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Men</th>
<th>Women</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>60–69 years</td>
<td>10</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>70–79 years</td>
<td>4</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>80–91 years</td>
<td>3</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17</td>
<td>31</td>
<td>48</td>
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The ethnicity profile of the participants was 46 ‘White British’ and two ‘Asian or British Asian’. Of the 48 participants, five were couples, each being interviewed separately thus the total number of properties in the sample was 43. These included 14 detached or semi-detached, nine bungalows, seven terraced houses or town houses and 13 apartments, six of which were sheltered or extra-care accommodation. Information was also gathered about education, income, ethnic background and who else lived in the household. This ensured a range of

2 The kitchen ‘work triangle’ and kitchen area used in ergonomic teaching considers movement between the kitchen sink, cooker and refrigerator. This is now seen to be a more complex pathway.
people from different backgrounds and in different contexts. Regarding others in the household, 27 participants lived on their own while 21 lived with a spouse or partner. Of the 41 who provided household income information, 30 had a total income of less than £20,000 while 11 had an income of £20,000 or more.

Findings

“What will come out over and over again from me is that what we had in those days was a kitchen, a back kitchen or sometimes called a scullery and a walk-in larder and a walk-in coal shed, a yard and with this sort of house a brick built wash house. So in what you would call the kitchen, the biggest of the lot, had a brick stove on the adjoining wall.”

Childhood reflections from the late 1920s (female, aged 88 years)

The Past Kitchen

Each person involved in the study was asked to relate their ‘kitchen history’ and comment on the kitchens they had experienced throughout their life. This information was analysed and key themes were identified concerning space, equipment/utilities, tasks, storage, social etiquette, meaning/identity, and changes made.

The narratives display the gendered use of kitchen space over time. In England, the childhood homes that many of today’s older people grew up in, predated central heating. Typically the kitchen was the warmest room in the house due to coal-fired heating. Participants of all ages reported on the kitchen as a place where family members would talk, read, listen to the radio, mend clothes, make jam, do homework, play board games, eat meals and do the laundry. For the oldest participants, allied spaces, such as the scullery, were highly valued ‘back kitchen’ areas with a Belfast or Butler sink, where laundry equipment such as the copper, the wash board and the mangle might be stored and used, or where food preparation or even bathing might take place. The larder was a valuable cool walk-in space.

Kitchens in which today’s older people raised their families tended to be sparsely furnished and equipped, initially, but as income and family size grew, new appliances were bought and valued, especially those that were labour-saving, cost-effective, and of a modern design. The kitchen was commonly the woman’s domain, but men helped by fitting work surfaces and tiles, making tables, and in pre and post World War Two, providing home grown or allotment produce for eating or preserving. Over time, social etiquette concerning where and how people ate their meals changed. This was reflected in comments on the kitchen hatch to the dining room; the hostess trolley; the through room and the different location of weekday and weekend meals.

The kitchen remains an important hub within older people’s homes, a multi-functional space where ‘everything happens’, including baking, writing letters, feeding pets and having tea with a friend. Older people often find it personally rewarding to continue with familiar kitchen routines and skills known all their lives.

The Current Kitchen

Discussion of the current kitchen focused on carrying out and managing everyday activities in relation to the kitchen layout, design and equipment. The 48 research participants had a range of physical abilities: 17 having some sight problems and 13 with hearing problems. Access and movement was also a significant issue with 26 participants experiencing reaching problems in the kitchen and 19 reporting dexterity problems such as when using kitchen implements. Health problems increased with age. Nine people used mobility aids while one person was a female wheelchair user aged 61, indicating the importance of inclusive design solutions to kitchen issues.
Common Problems and Suggestions

The most common problems reported were reading small instructions on packaged food or other kitchen products and seeing the cooker controls. Bright sun also made oven or microwave controls hard to read. Some people put on glasses but this could be a hazard if leaning over a hot oven plate. Measurement of lighting levels found that the food preparation areas were the most poorly lit, both naturally and artificially, falling well below recommended minimum levels. Despite the use of hearing aids by some, several people experienced problems such as hearing the door bell or the phone ring with the kettle on, as well as the ceiling light humming causing distraction. Coping strategies included simply not leaving things unsupervised in the kitchen or when moving to another room leaving the kitchen door open.

To address problems of reaching or stretching to use appliances or access cupboards, participants coped by crouching rather than bending down, using steps to get to higher shelves, and pulling themselves up using the worktop. Arguably steps could pose a certain risk for some older users although they tried to minimise this by careful usage. Some participants had a carousel shelf installed to avoid having to reach into a cupboard or to more easily access several items located together such as jars, herb and spice bottles. (See photo on p. 4). One participant had new wall cupboards located at a level lower than standard which made the higher shelves more accessible.

Many people owned special gadgets for opening jars, cans and milk cartons to overcome limitations of dexterity, movement and strength, caused by painful arthritis. Less support was apparent for tasks such as lifting a heavy pan or dish, or turning a difficult knob or tap. Although several people received help from others with shopping, many did it themselves, sometimes using mobility aids such as a stick or scooter. No one stated that they shopped online. Physical disability was the main barrier to preparing food, e.g. pain and lack of strength when peeling and chopping, backache when standing for baking, etc. Sitting for food preparation (requiring a lower work surface) and taking rest breaks were useful strategies. Space for a kitchen table was not always available so eating, especially when living alone, would take place in a living or dining room often with a TV or radio for company.

A number of coping strategies for washing up were suggested such as: installing a slimline or counter-top dishwasher and using it frequently; loading dishwasher utensils as they were used and hand washing them if not very dirty. Sometimes a kettle was seen as heavy and unsafe to lift. Some used a small lightweight kettle or a microwave for heating water. It was also commented that adequate light and colour contrast for crockery, surfaces and surface edges was needed for those with impaired vision.

For the people who owned a microwave, problems included: it being located at the wrong height, the door being on the wrong side, light falling on the display, cooking the food for too long, and transporting food from the microwave, when hot, to the table or work surface. The simple operation of a microwave was seen as important but not always delivered. An oven/microwave combination was also found useful and convenient.
When washing and drying clothes opening the appliance door was sometimes problematic. One person experienced difficulty carrying the clothes outside so shuffled the wash basket with her feet. General strategies for managing the household washing and drying included using radiators or a clothes horse, drying in a warm area such as the conservatory, washing small amounts at a time, and doing it in the afternoon and drying with heaters overnight. Some people in sheltered accommodation had a shared laundry facility while one couple used a commercial laundry.

Ironing was the most commonly reported task causing problems with ironing boards being heavy to carry and hard to open. Strategies adopted to make ironing easier were to only use the ironing board for large items, having clothes that did not need much ironing, and not ironing underwear and sheets. Kitchen cleaning problems included getting an appliance out to clean behind it, bending to clean the oven and fridge, cleaning from a wheelchair, reaching to clean the windows and vacuuming the kitchen carpet. Everyone did recycling. Most had a waste bin in the kitchen and many had a designated space or containers for items to recycle. Problems included bending to empty the pedal bin and knowing which bags to put different items of waste or recycling into. One person often found their shared bin compound locked, and getting recycling to the pavement or roadside bin could be a problem.

People were asked what changes they had made or would like to make in their kitchen. These included:

- **Appliances:** more plug sockets or better height and positioning, dishwasher, automatic kettle, lighter iron and pull out board, water filter tap and lever taps.

- **Environment:** a light that can be lowered over the table, lighting over/under cupboards, a mirror over the sink to see the garden (the kitchen window was too high to see out), better lighting in larger or walk-in cupboards and space for a table.

- **Cleaning:** a lighter floor to show dirt, vinyl off-cuts on top of wall units so they can be removed and cleaned, a ‘truly self-cleaning oven’.

- **Reaching and access:** shallower drawers, pull out shelves in cupboards, corner cupboards with revolving units for access.

**The future kitchen**

The TiKL project has enabled us to think about problems that older people face in the kitchen and to identify simple and practical solutions to overcome them including more advanced technology to make kitchen life easier. Many of these ideas are based on the ‘ambient kitchen’ where integrated technologies provide subtle but effective support to meet people's needs whether physical or cognitive.

A survey was conducted with a further group of older people to obtain their reactions to some of the ideas and concepts behind the smart or ‘techno kitchen’. The 45 respondents included 30 females and 15 males, aged from 60 to over 90 years.

Questions consisted of a list of possible technological enhancements or innovations that might help someone in the kitchen. Respondents were asked to state whether they would like to have each one in their own kitchen or not.
A selection of the innovations are shown in order of increasing popularity, together with the percentage of people wanting each one:

- Auditory or visual read out of fridge contents to save looking inside and wasting energy when opening the door – 36%
- A device to scan and read out small text on packaging – 50%
- Ability to raise or lower cupboard height for easier access – 56%
- Ability to raise or lower worktop or sink height for easier or seated use – 58%
- Task light that comes on automatically when needed – 69%
- Remote control of windows and blinds – 69%
- Quick cooling oven hob – 73%
- Possible flood alert warning – 81%
- Automatic turn off of electrical appliances e.g. iron, toaster or oven when the person leaves the house – 91%

The results show that there is enthusiasm for certain types of technological support in the kitchen. Most interest was expressed in technology that increases safety in the kitchen or which addresses immediate problems. Other innovations, although helping with well known problems, were seen as too technically complicated or more suitable for other people with more severe disabilities. Advanced technological support seems to have the potential for making kitchens easier to use but more needs to be done to make consumers more aware of its feasibility and availability. An understanding of older people’s views remains critical to ensure that such developments are useful and acceptable to kitchen users in the future.

The voices from the kitchen

**Past**

“The kitchen table: that’s where we all sat to eat. Yes… and where we always had to sit and eat at the table together, especially sort of tea time…. Oh yes, yes my mother insisted on that… it was a real treat if you were allowed to take a sandwich and perhaps sit down in the front room. It was a treat for you to be able to do that… yes… that was your Sunday night treat.”

(Participant, recalling 1950s childhood).

**Future**

“I would like to save energy, for example with a special plug for appliances (to save power when not needed) and have heard that new dishwashers are more energy efficient and cleaner than washing up in the sink.”

“I do miss window space and I miss light. I mean it annoys me that I have to put the light on in the kitchen (even) in the brightest part of the day…. The worktops are dark as well. There’s too much that’s too dark.”

**Present**

“I had to get rid of things. Well a lot of things were too high for me to reach…..I can’t get to the top shelves up there and really all the things I use a lot are all here and there… It is an effort to get to them. So you would really say … lower cupboards would be better.”

“I like the idea of auto shut off as I have already burned the worktop and left the hob on overnight.”
Conclusion

This research provides an insight into the ergonomic problems that older people currently face. It was satisfying to see examples where people had made adaptations to meet their own needs. However, it would be preferable for kitchens to be designed to be truly flexible so that they can meet people’s changing needs as they grow older. The combination of social and ergonomic methodologies used here enables us to learn how past and present histories can add a richer perspective to what people need and want in age friendly kitchens in the future.

This is the challenge for kitchen designers, planners, manufacturers and installers.

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