The Ergonomist
No. 487 January 2011
Newsletter of the Institute of Ergonomics & Human Factors

Coping in the kitchen: seeing through the eyes of older users

The key to a quiet life... or death?
The human factor - the key to enabling secure systems
Coping in the kitchen: seeing through the eyes of older users

Martin Maguire

A high proportion of time in the home is devoted to activities in the kitchen so a comfortable environment is needed allowing tasks to be performed with the minimum of effort and strain. Memories of kitchen life are a record of social history. A project, funded by the New Dynamics of Ageing Programme, has explored people’s experiences of kitchens past and present through oral history and how kitchens reflect changes in people’s lives. It aims to develop material to guide the design of kitchens to evolve naturally to meet lifetime needs, and so realising inclusive design.

The research focused on 48 people from Loughborough and Bristol. Two interviews were held with each person, the first gathering an oral history of kitchens experienced during their lives linked to specific events e.g. first remembered home; parental home when a teenager; leaving home, etc. The second interview focused on their present kitchen, how well it met their abilities and needs, and any coping strategies they adopted to overcome problems using it. Thus far the interviews of 40 participants have been analysed. These include 14 males and 26 females between the ages of 62 and 91. The range of housing types included 7 terraced houses, 7 semi-detached houses, 7 detached, 9 bungalows, 4 low rise flats or town houses and 6 in supportive housing.

A series of measurements were taken including the perimeter of the ‘kitchen triangle’ - fridge to oven to sink. This ranged from 3.17m to 6.74m (both terraced houses) illustrating the diversity of kitchen dimensions. Worktop heights ranged from 89cm to 92cm from the floor and the bottom shelf of kitchen wall cupboards from 137cm to 152cm. This highest bottom shelf was in the kitchen of a lady who was just 157.5cm (5' 2'”) presenting her with a difficult access task. Survey work conducted since 1943 has produced a varied selection of recommendations for heights of kitchen sinks and work tops. But choosing a single height does not solve the problem for individual users – highlighting, ideally, the need for a customised or adjustable kitchen.

The research sample included a range of abilities typical of the age range: 9 using mobility aids, 15 having some sight problems, and 13 some hearing problems. Access and movement was also a significant issue with 21 experiencing reaching problems in the kitchen and 15 reporting dexterity problems such as when using kitchen implements.

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 put on glasses but this could be a hazard if leaning over hot oven plates. Lighting levels were measured for different areas of each kitchen including the food preparation area, sink area, eating area, both with and without the lights on. It was found that the food preparation areas were the most poorly lit, both naturally and artificially, and fell well below recommended minimum light levels.

Despite the use of hearing aids by some, several people experienced problems such as hearing the door bell or phone ring with the kettle on, ceiling light humming causing distraction and missing events such as the phone ringing. Coping strategies included simply not leaving things unsupervised in the kitchen and leaving the kitchen door open to hear what was going on if the person moved into another room.

To address problems of reaching or stretching to use appliances, cupboards or down to the floor, adaptations included crouching rather than bending down to the oven, use of 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 and this was often the way they had become used to accessing higher cupboard shelves. Some participants had a carousel shelf installed to avoid having to reach into a cupboard or a small turntable within a cupboard to more easily access several items located together such as jars, herb and spice bottles. Pull out drawer units replacing fixed shelving can also make kitchen storage
more accessible. One participant had new wall cupboards located at a lower level than standard.

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 when peeling and chopping, lack of strength, backache when standing for baking, etc. Sitting for food preparation (requiring a lower work surface) and taking rest breaks were useful strategies adopted to overcome problems.

A number of coping strategies for washing up were suggested by people: installing a slimline or counter-top dishwashing and using it frequently; loading dishwasher utensils as they were used, and hand washing them if not very dirty.

For making a hot drink, one woman found her kettle heavy and unsafe to lift and so slid it to the tap, filled it, and then slid it back to turn it on. Others used a small lightweight kettle or a microwave instead of a kettle. It was also commented that adequate light and colour contrast for crockery and surfaces 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, cooking the food for too long, and transporting food from the microwave (when hot) to the table or work surface. Simple operation of a microwave was seen (when hot) to the table or work surface. (requiring a lower work surface) and taking rest breaks were useful strategies adopted to overcome problems.

A number of coping strategies for washing up were suggested by people: installing a slimline or counter-top dishwashing and using it frequently; loading dishwasher utensils as they were used, and hand washing them if not very dirty.

For washing and drying clothes, opening of the door was sometimes problematic. One person experienced difficulty carrying the door was sometimes problematic. One person experienced difficulty carrying the door, putting it to the table or work surface.

For making a hot drink, one woman found her kettle heavy and unsafe to lift and so slid it to the tap, filled it, and then slid it back to turn it on. Others used a small lightweight kettle or a microwave instead of a kettle. It was also commented that adequate light and colour contrast for crockery and surfaces 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, cooking the food for too long, and transporting food from the microwave (when hot) to the table or work surface. Simple operation of a microwave was seen as important (and not always delivered). An oven/microwave combination was also found useful and convenient.

For washing and drying clothes, opening of the door was sometimes problematic. One person experienced difficulty carrying the door, putting it to the table or work surface. General strategies for managing the household washing and drying included using radiators or a clothes horse for 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 in. One person often found their shared bin compound locked.

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

- Appliances: more plug sockets or better positioning, dishwasher, automatic kettle, lighter iron, water filter tap, 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/walk-in cupboards and space for a table.
- Cleaning: 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 research has proved enlightening with regard to the ergonomics 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. This is the challenge for kitchen designers, manufacturers and installers.

Useful information

