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# COMMUNITY VOICES IN DESIGN PRACTICE: A CASE STUDY OF UNDERSTANDING OLDER ADULTS' CLOTHING NEEDS FOR KEEPING WARM AT HOME

OLDER ADULTS | COLD | HOME | THERMAL COMFORT | CLOTHING

## ABSTRACT

THIS PAPER DISCUSSES OPPORTUNITIES FOR DESIGN IDENTIFIED THROUGH A RESEARCH INQUIRY INTO THE PERCEPTIONS AND ATTITUDES OF OLDER ADULTS TOWARDS EXISTING CLOTHING PRODUCTS USED TO KEEP WARM AT HOME.

There is a well-established market of performance sportswear brands and clothing producers that have developed garment solutions for people to enjoy outdoor activities in the cold (O'Mahony 2002). However, there is a gap in our understanding of how to protect older people from becoming chilled and cold at home, particularly against a backdrop of rising fuel bills and concerns of fuel poverty. While old and frail older people can feel cold at any time, the relationship between winter, cold and illness is a major health concern (Public Health England 2014).

Funded by a Research Design Service for Yorkshire and the Humber (RDS YH) Public Involvement grant, an interdisciplinary team of fashion design, health, and sustainability researchers from Sheffield Hallam University and the University of Salford conducted a pilot study to understand the behaviours of older adults living in different domestic environments at risk of indoor cold. Through focus groups and semi-structured interviews, the team sought to identify the body regions where

older people feel cold when at home. The interviews were also used to understand their attitudes to natural fibres, advanced textiles and insulating garments used to provide warmth. In addition, data was gathered on: the types of clothing used; perceived effectiveness of clothing; material preferences; and additional coping strategies that older adults adopt to increase body warmth in the home.

Within the paper we profile and compare specific behavioural practices that are adopted by older adults to keep warm in domestic environments and discuss the opportunities for design to meet the physiological and psychological needs that older adults may require. The initial analysis of data gathered during the pilot study has indicated that there is a need to improve thermal comfort for older adults at home. Consequently, an ongoing program of research activities is being developed to extend the work further. The pilot study data has helped identify the challenges and potential for design and at the same time has revealed the value of insight that can be gained when engaging communities of people in design activities.

## INTRODUCTION

It is widely accepted that clothes enable people to express their values, interests and identity (Crane 2000). Fashion and clothing choices are a highly visual form of personal expression, which for many enhances independence, confidence and provides a sense of wellbeing. But while the value of aesthetics in clothing is important, more can be done

within the fashion industry to improve the development of products and services that respond to individual and societal needs and contexts. Although fashion designers and producers are tackling the environmental and ethical impacts associated with production, the industry's broader engagement with society remains difficult. This is particularly evident with marginalized groups of people. The fashion industry is habitually regarded negatively. Exclusive rather than inclusive; a position that is often connected to perceived discriminatory positions around age, size, religious or cultural needs, restricted mobility or issues related to health. However, user-centred design approaches can provide fashion designers with the opportunity to focus more on people, their lived experiences and everyday problems or situations. By engaging people in the design process, through a variety of user-centred methods and tools, the designer can better understand and '...interrogate the needs, wants and limitations' of people (Fuad-Luke 2009: 155). While user-centred approaches often remain unfamiliar or tangential to the fashion design process as it is applied in mainstream industry, their adoption can provide fashion designers with the opportunity to positively contribute to our social, environmental and cultural agendas. In this paper a user-centred approach has been used to drive a pilot study of older adults at risk of being cold at home as a means of foregrounding the benefit of understanding the needs and experiences of users to reveal new opportunities for clothing design.

**WHILE THE VALUE OF AESTHETICS IN CLOTHING IS IMPORTANT, MORE CAN BE DONE WITHIN THE FASHION INDUSTRY TO IMPROVE THE DEVELOPMENT OF PRODUCTS AND SERVICES THAT RESPOND TO INDIVIDUAL AND SOCIETAL NEEDS AND CONTEXTS.**

### BEING COLD AT HOME

For older adults being cold creates feelings of anxiety and misery, which can often worsen pre-existing illnesses (Age UK 2014). Although in winter there is a greater risk to the health of older adults particularly those who are frail, the effects of being cold can be felt at any time of the year especially if outside temperatures are below the seasonal average. During periods of extreme winter weather the warm home becomes an important refuge but the challenge for many people is that they are either unable to afford to keep warm or their attitudes and beliefs impact on home heating behaviours. However, cold-induced health risks such as stroke, respiratory and cardiovascular diseases may be avoided if support to keep older adults warm at home was available as a major health initiative.

While our understanding of why older adults become cold at home is complex, it is clear that inefficient and inadequate heating systems and concerns of rising fuel costs typically affect the use and choice of heating within the home. Resources such as: 'Keep Warm, Keep Well' (Public Health England 2014); 'Health and Winter Warmth: Reducing Health Inequalities' (Regional Public Health Group in the South East 2007); 'Evaluation Report: Warm Homes, Healthy People Fund 2012-2013' (Public Health England 2013) and 'Keeping Warm In Later Life (KWILLT)' (Tod et al 2012) all highlight the need for older adults to adopt strategies such as 'keep moving' as well as 'wrapping up' to keep warm and alleviate the effects of the cold on symptoms of arthritis, muscle strength and dexterity. However, an issue of

concern is that unlike younger adults, older adults are less able to recognise the symptoms of being cold or 'know' when they are getting cold.

Organisations such as Public Health England (2014) and Age UK (2014) frequently advocate clothing solutions as part of a suite of recommendations intended to support individual choices for keeping warm. Typically the recommendations promote the use of existing garments and products, which when worn in different combinations improve personal thermal comfort. For example, wearing layers of garments made from thin wool or fleece, or wearing thermal underwear garments and socks are frequently recommended as strategies to increase warmth. Further endorsements include wearing accessory items such as gloves, hats and scarves to protect the face and hands and to wear hats for bed when extreme cold temperatures are felt. These messages are targeted towards a wide age range of people from 65 years and older but rather like younger adults, their personal clothing preferences vary greatly in style, fashion, fabrics and function. While the advice is clearly intended to better inform older adults, it is the acceptability and extent of their acceptance in the community that is unknown.

From existing studies that explore older adults and warmth at home, there are few that explore the benefit of clothing interventions. Tod et al (2012) broadly examined attitudes and behaviours of older adults to keeping warm at home. We have been able to add to this in our aim to explore clothing products that are intended to improve the thermal comfort of older adults at

home. Preliminary objectives for the research team included:

- to understand the behaviours of older adults in different domestic environments.
- to examine personal feelings towards being cold.
- to identify the body regions that are commonly prone to cold.
- to ascertain individual clothing choices used to keep warm.

### CLOTHING FOR KEEPING WARM

New developments in textiles, particularly in performance sportswear and outdoor applications, have dramatically improved the function and comfort of insulating fabrics. At the same time the design of clothing systems used to create garment combinations that for example, enable the attachment and removal of sections, have provided the opportunity to personalise extreme performance garments to meet specific and individual thermal requirements (O'Mahony & Braddock 2002).

In terms of examining the potential and benefits of innovative clothing interventions for keeping older adults warm in the home, existing literature is limited. Previous studies have typically focused on examining the thermal properties of textile products. Trials conducted have assessed textile materials and their application in clothing developed for a defined user for example, clothing for outdoor pursuits, adaptive clothing or sportswear. Testing has also been carried out for textile materials or fibres used in garments for hot or cold climates or specific locations for example, in specialist workplaces. In terms of studies that have explored the

## IN UNDERSTANDING OLDER ADULTS PERCEPTIONS OF EXISTING CLOTHING PRODUCTS, IT IS IMPORTANT TO ESTABLISH IF AND HOW STYLE, FASHION AND FUNCTIONALITY CONTRIBUTE TO CLOTHING CHOICES.

clothing needs of older adults there has been a focus on products for outdoor cold climates. For example, McCann et al (2011) explored outdoor textile-led solutions for active older adults, while Fernie and Row (2004) investigated outdoor winter clothing for functionally impaired older adults. These studies provide valuable insight. However, as Li et al (2010) identified, a gap exists in our understanding about how to protect frail older people from becoming chilled and cold at home. Further to this, there is a need for additional research on developing indoor clothing for older adults. In particular, to accommodate individuals with an impairment or mobility issue or who experience changes in environmental temperatures for example, when moving from indoors to outdoors.

Although this research highlights the need to develop new, improved garments, public information campaigns frequently recommend older adults to make use of existing garments to increase thermal comfort. Therefore, it is necessary to reassess the performance of existing clothing products that are already available and in use. As Assist Ireland (n.d) have argued, some of the advice may be contestable. For example, older garments can become less

insulating with age as the fabric becomes compressed and compacted. Additionally, older adults find some fibres, such as wool, difficult to launder and maintain, while other fabrics perceived to be insulating provide little real warmth due to their construction for example, the fibres may be loosely woven (Assist Ireland n.d). With these points in mind, it is apparent that new data is required to better understand the behaviour and attitudes of older adults towards existing clothing choices.

### STYLE AND FASHION

In understanding older adults perceptions of existing clothing products, it is important to establish if and how style, fashion and functionality contribute to clothing choices. A common misconception is that older adults place a lesser value on the aesthetic qualities of clothing than that of comfort but existing literature often argues against this. Although garment fit is considered to be problematic, which is often attributed to physical age-related changes, older adults are 'more fashionable now than ever before' (Yurchisin & Johnson 2010: 91). As many older adults 'feel younger than their physical age', garment aesthetics and up-to-date styling alongside

comfort, play a role in making purchasing choices (McCann 2015, Yurchisin & Johnson 2010). But during the development of new clothing products, the designer does not usually address the criterion equally (Yurchisin & Johnson 2010). McCann (2015) argues that the clothing needs of older adults, both aesthetic and functional, is not being met by mainstream fashion even though there has been a rapid increase in the numbers of older adults over 65. As Twigg's (2012) commentary suggests, perhaps we should be asking why it is that fashion is preoccupied with youth and youthfulness rather than the everyday clothing needs of people over a lifetime?

### KEEPING WARM AT HOME: UNDERSTANDING ATTITUDES AND BEHAVIOURS OF OLDER ADULTS

Funded by a Research Design Service of Yorkshire and the Humber (RDS YH) Public Involvement grant, the team of researchers from Sheffield Hallam University and the University of Salford conducted a pilot study focused on understanding the clothing choices made by older adults for keeping warm at home. Following institutional ethics clearance, the study involved a mixed methods approach using

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a combination of qualitative and quantitative devices including semi-structured interviews, observation and worksheet activities. The core methodology centred on engaging with three focus groups based in different locations in South Yorkshire. With the assistance of Age UK access to the groups was scheduled to coincide with existing regular older adult gatherings including a sheltered accommodation luncheon club, a community centre morning club and a church hall exercise session. The focus group sessions provided the opportunity to talk to members of the group in an accessible and comfortable setting amongst peers and carers where social dynamics were inclusive and convivial.

**FOCUS GROUP ACTIVITIES**

The focus group sessions involved individual face-to-face and small group interviews, a general group discussion and three worksheet activities. The interviews and discussion were focused on a set of questions around practices adopted within the home to keep warm at different times of the day. Garments were presented as prompts to elicit further insight from the participants at various points in the discussion.

To complement the interviews and discussion three worksheet activities were completed to capture data concerning: areas of the body that are frequently cold; feelings about pain; and garments chosen for warmth indoors. The first worksheet required mapping areas of the body where sensations of cold are experienced. Each participant marked on an illustrated manikin figure the areas of the body where cold was most

often felt. The second worksheet focused on understanding the relationship between discomfort and pain when feeling cold. Using a visual Facial Pain Scale (Scherder & Bouma 2000), typically used with people with language problems or cognitive impairment, the participants were required to choose the facial expression that best described the degree of discomfort or pain felt when cold. The third worksheet showed different items of commonly available clothing and accessory products typically worn by people to keep warm for in and outdoor use. Following a review of clothing products recommended in public information advice literature, the pictured items included gloves, hats, thermal underwear, fleece or lightweight cardigan, thick wool cardigan and an overcoat. An opportunity to list other used textile items was also provided. The participants were asked to rank the items in order of preference, noting the items most likely to be worn to keep warm indoors to items that are never worn. At the same time the participants were reminded of the garment prompts used for the group discussion and were encouraged to consider personal preferences for specific fibres, fabrics, colours and garment styles.

**PARTICIPATION**

Across the three focus groups thirty-two participants engaged in the study. Of these, 17 participants (aged 58-85, median 76 years) fully engaged in the detailed feedback and the worksheet activities, while 15 participants were involved to a lesser extent as a consequence of medical or cognitive impairments. During the interviews and the group discussions it was noted that

the social setting might have created a reluctance to admit certain behaviours in front of peers. However, at particular times the group setting enabled common themes and views to emerge.

### **FINDINGS: HOW DOES IT FEEL TO BE COLD?**

On analysing the interview and discussion data there are concerns amongst older adults about feeling cold. Discussions generated mixed views, ranging from those that claimed to not feel cold to those that felt 'cold all over'. However it was apparent that in some older adults their temperature perception might be less precise. On commenting, 'I'm not cold, feel my hands' one participant, whose hand was cold to touch, was at the same time observed rubbing their hands together, simulating an act to generate warmth. When questioned about feeling cold at night, in one focus group session 4 out of 9 people (men and women) reported symptoms that suggested being cold affected sleep quality. However, there was a positive attitude towards the use of heating aids such as electric blankets. It emerged that a common coping strategy amongst the groups was to go to bed early, although the rationale for this decision appears unclear. One female participant, who typically retired to bed at 8pm, stated that this decision was based on the need for comfort; to watch television with a hot drink while enjoying an enclosed space in her home. However, it remains unclear whether an underlying reason may be the need to reduce the heating in the home.

In the general discussions, the topic of being cold at home was not perceived as relevant to all the participants.

Comments expressed included, 'What if you don't feel cold particularly?' and 'I'm never cold'. However, to counteract being cold some participants willingly increased the temperature of their heating when it was needed. Indeed one participant strongly expressed a refusal to be cold at home and argued that he felt he had the right to increase his heating because he had worked hard throughout his life. Although the responses are subjective and perhaps may have been mediated by the social context, they do paint a mixed picture of attitudes and behaviours towards experiencing feelings of cold.

### **FINDINGS: PAIN, DISCOMFORT AND AREAS OF THE BODY SUSCEPTIBLE TO COLD**

When discussing the issue of pain or discomfort accompanying feelings of cold, many participants expressed concern. 16 of 17 participants completed the 'Faces Pain Scale', with scores ranging from 2 to 7 (median 3) that indicated feelings of mild discomfort to severe pain were associated with being cold. The participants felt that being cold was manifested as tension, feeling tired and affecting their mood. One participant expressed the level of potential impact of being cold as 'it is pain', not only discomfort. Some of the participants felt that this was a typical feature of home life, 'My hands are always cold, even when I'm in the house'. For others, on-going medical conditions, such as Raynaud's disease, meant that being cold was a regular symptom.

In mapping areas of the body frequently felt as cold, all but one (16/17) of the worksheet maps were legible. Of these, 15 participants

indicated that they had cold extremities, identified as: hands only (n=3) feet only (n=6) hands and feet (n=6). In addition to cold extremities, five people reported a cold body core, typically upper or lower trunk, upper arms and legs. From the mapping exercise it was apparent that the hands and extremities are the most vulnerable to cold: 'It's in the extremities that I get cold first. It starts with the hands.' Another commented, 'my hands are always cold, even in the house'.

### **FINDINGS: PERCEPTIONS OF CLOTHING USED TO KEEP WARM**

In the interviews and discussions with the participants there was an overwhelming view that outdoor clothes were not acceptable in a domestic setting. Wearing outdoor items, such as a hat indoors was 'not polite' (one male participant). Equally wearing gloves indoors was perceived to be unacceptable. Instead the dominant view was that extra layers of clothing were generally added to increase warmth in the daytime. For example, one female participant stated that although she tried to work quickly in the kitchen (described as frequently cold) she would put on extra items of clothing before entering the room. The habitual use of additional layers was reiterated widely amongst the participants. One male participant wore a cardigan when cold and 'zips it right up to the top'. It was generally agreed that items such as fleece garments were only added as a last resort. Notably, the discussion around thermal underwear items generated strong views with most participants agreeing that these were products generally not worn.

## THROUGH THE ENGAGEMENT OF USER-CENTRED DESIGN APPROACHES THERE IS THE POTENTIAL TO CREATE PRODUCTS WITH INPUT FROM END-USERS WITH SPECIFIC NEEDS, WHICH ARE SOCIALLY AND PRACTICALLY ACCEPTABLE.

From the data gathered through the clothing preference worksheets the popular first choice garments were 'fleece / lightweight cardigan' (n=8). Given the negative response to fleece garments in the interviews and discussions, it could be said that a lightweight cardigan was a popular option. The second choice item was a thick wool garment (n=4) followed by thermal undergarments (n=3), which does somewhat contradict the verbal opinions of the participants who appeared to agree that thermal products were unpopular. With the exception of one participant, who listed gloves as a first choice, none of the participants chose outdoor clothing (hat, coat) as a first choice option to wear indoors, which reiterates the data gathered through the interviews and discussions. In fact, outdoor clothing items were most commonly listed as last choice. In response to the opportunity to list other items used to increase thermal comfort products listed included blankets (n=2), socks (n=4), thick pyjamas (n=1) and slippers (n=1).

In terms of fabric preferences, many of the participants were concerned about the weight of textile products. While woollen garments were perceived as warm 'I would wear wool rather than synthetic fabric as its warmer', chunky knitted products were largely avoided because they were considered heavy and uncomfortable. This in turn led to conversations around fabric and garment weight, which stimulated an interest amongst the groups in modern lightweight synthetic materials as alternative options. New lightweight down filled garments proved popular when handled by the participants, 'it feels nice to touch...gives you a feeling of warmth'. However, there were questions around ease of care and the 'washability' of new fibres, which highlighted a potential mistrust in synthetic materials. At the same time, style was an important contributor in determining clothing choices for many of the participants, and remaining smart or stylish was important whether staying and keeping warm at home or venturing outside.

### FINDINGS: OPPORTUNITIES FOR DESIGN?

While many of the public information campaigns provide recommendations on the ways in which older adults can keep warm at home, it was evident that some do not heed this advice. For example, one participant rejected the concept of wearing garment layers to increase thermal comfort 'I'd turn the fire up [rather than put on extra clothes]'. Others strongly rejected the notion of wearing a hat indoors in extreme cold weather. Notably, wearing outdoor articles such as hats (or gloves or scarves) was generally considered improper and socially unacceptable. This points to a need to reflect on the current clothing for warmth advice promoted in public information campaigns and to explore the potential for new innovative products that may better suit the thermal, functional and aesthetic needs of older adults in an indoor environment. Given the rapid increase in the numbers of older adults aged 65 plus in the UK population, McCann (2015) argues that the clothing design needs of older adults is

not currently being met by mainstream fashion. At the same time with concerns around fuel poverty, 'I don't put the heating on unless I'm forced, because it's expensive isn't it?' there is clearly a gap in meeting the aesthetic and functional needs of older adults. Therefore there are opportunities for design to meet the specific needs and requirements of a large, and growing section of the population.

Carroll (2015) and McCann (2015) support the argument that by working with end-users to initiate and develop new garments, designers may be able to create products that are socially and practically acceptable. Our study revealed that many older adults place a higher value on clothing as a representation of self ahead of its seemingly practical application. Conversely it was apparent that personal clothing preferences appear to differ greatly between younger old, old, and older old adults, which indicates a need to better define the age cohorts within the older adult population so that clothing can be developed in response to specific demographic needs and characteristics. Moreover, the older adults who engaged in the study were receptive to new product innovations designed to improve thermal comfort and were highly responsive to new lightweight textile materials that provided both comfort and warmth.

These observations suggest factors that should not be overlooked when developing new products; in general, older adults, regardless of age, still have distinctive preferences for colour, style and design in garments.

## CONCLUSIONS

Within the paper we have highlighted some of the key points raised by older adults that provide an insight in terms of attitudes towards being cold, feeling cold and clothing that is used to provide warmth at home. In relation to being cold the data revealed that the views of older adults extended from those that claimed to not feel cold to those that felt 'cold all over'. However, while the views were mixed, it is apparent that for some their temperature perception might be blunted. It does appear that many older adults feel cold mostly in the extremities, while a smaller number report that cold is felt within the body core, typically upper or lower trunk, upper arms and legs. In terms of clothing used to keep warm, although items such as gloves would increase thermal comfort in the extremities, the notion of wearing outdoor clothing items for indoor use is not socially or culturally acceptable. It is important to older adults that they remain smart or stylish whether staying and keeping warm at home or venturing outside, and that this occurs within social and cultural conventions.

From our study we have been able to signal the opportunity that design and designers may provide in improving thermal comfort and addressing attitudes towards style and function in clothing garments. Although the project is a work-in-progress, it is recognized that a larger study is needed to more clearly define the key necessary and desirable qualities in garments that may be used to maintain or increase the thermal comfort of older adults at home. Once identified, these indicators may help signal pathways to the improved design and development of products or services that may enable individual older adults to maintain and personalise their thermal comfort.

Preparatory studies, such as the one discussed in this paper, demonstrate that with an understanding of users, their behaviours and attitudes, it is possible to identify new future design opportunities that may otherwise be invisible to the design community. Through the engagement of user-centred design approaches there is the potential to create products with input from end-users with specific needs, which are socially and practically acceptable.

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