

Understanding factors influencing vulnerable older people keeping warm and well in winter: a qualitative study using social marketing techniques

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ABSTRACT

Objectives: To understand the influences and decisions of vulnerable older people in relation to keeping warm in winter.

Design: A qualitative study incorporating in-depth, semi-structured individual and group interviews, framework analysis and social marketing segmentation techniques.

Setting: Rotherham, South Yorkshire, UK.

Participants: 50 older people (>55) and 25 health and social care staff underwent individual interview. The older people also had household temperature measurements. 24 older people and 19 health and social care staff participated in one of the six group interviews.

Results: Multiple complex factors emerged to explain whether vulnerable older people were able to keep warm. These influences combined in various ways that meant older people were not able to or preferred not to access help or change home heating behaviour. Factors influencing behaviours and decisions relating to use of heating, spending money, accessing cheaper tariffs, accessing benefits or asking for help fell into three main categories. These were situational and contextual factors, attitudes and values, and barriers. Barriers included poor knowledge and awareness, technology, disjointed systems and the invisibility of fuel and fuel payment. Findings formed the basis of a social marketing segmentation model used to develop six pen portraits that illustrated how factors that conspire against older people being able to keep warm.

Conclusions: The findings illustrate how and why vulnerable older people may be at risk of a cold home. The pen portraits provide an accessible vehicle and reflective tool to raise the capacity of the NHS in responding to their needs in line with the Cold Weather Plan.

INTRODUCTION

Cold weather kills.^{1–5} Throughout Europe and beyond higher rates of excess winter deaths (EWDs) are found in countries with less severe, milder winter climates.^{6–7} In

ARTICLE SUMMARY

Article focus

- What factors influence older vulnerable people keeping warm and well in winter?
- How do these factors interrelate in different people in order to increase the risk an older person is cold at home?
- How can this be represented by a social marketing segmentation model?

Key messages

- Knowledge and awareness of safe temperatures, the health impact of cold and how to use heating efficiently were low across the study participants.
- Older people's values and beliefs can interact with the contextual factors and barriers in such a way that they often end up being cold at home.
- The segmentation model can illustrate the diversity of older people at risk of living in a cold home. It can be used as a reflective tool at a clinical and strategic level to identify and refer vulnerable older people.
- Strategic responses are required to help bring about the required partnership, systems, boundary spanning approaches and capacity development in staff and communities needed to reduce excess winter deaths.
- Greater focus is needed to ensure affordable warmth interventions achieve the desired outcome of safe indoor temperatures for older and other vulnerable people.

November 2011, the Department of Health and Health Protection Agency released the first Cold Weather Plan for England¹ along with the supporting evidence of why cold weather planning is essential to health and wellbeing.² In 2008–2009, over 26 000 EWDs were reported in England, with the majority occurring in those older than 65 years.⁸ EWDs are calculated by comparing deaths in winter months (December to March) with the expected number of deaths (average non-winter months). EWD rates have been

ARTICLE SUMMARY

Strengths and limitations of this study

- The study has provided understanding of the complex environment within which vulnerable older citizens live and the factors that conspire against them being able to keep warm.
- The study provides some insight into why older people at risk of being cold are not always able to make decisions to keep them warm. It reinforces and expands the findings of others.
- The study has generated a segmentation model and pen portraits that can be used as a reflective tool at a clinical and strategic level to identify and refer vulnerable older people.
- The main limitation of the study is that it was conducted on a single site.

rising since 2003 and account for one in 20 of all deaths per year in England.⁸ Approximately 40% are due to cardiovascular deaths and a third due to respiratory mortality.¹⁻⁹ England compares unfavourably to other northern European countries in terms of winter deaths with colder countries, like Finland, experiencing half the EWDs.¹ Countries such as Finland are better prepared for the cold in terms of thermal efficiency of properties and outdoor clothing.¹⁻¹⁰ In addition to mortality, cold weather reaps huge costs in terms of morbidity and healthcare use. Older people are among those most at risk of the negative health impact of cold weather along with children and young families and those with multiple comorbidities and disabilities. Risk of death is increased in winter particularly for vulnerable older people with underlying health conditions such as heart and respiratory diseases.¹⁻⁵ Indirect impacts of cold weather include depression and poor mental health.⁵

Increasing fuel prices, reducing household incomes and energy inefficient homes have all contributed to the rising trend in England in rates of fuel poverty.¹⁻¹¹ More than 4 million households were in fuel poverty in 2009, with rates increasing to over 6 million in 2011. Fuel poverty occurs when households have to spend more than 10% of their income to attain WHO minimum temperature standards (21°C in the living room and 18°C in the bedroom).⁴ Those in fuel poverty are at greater risk of death and illness due to cold weather.¹⁻⁵ Older people, with underlying health conditions and a flat pension-reliant income are among the largest population who are fuel poor.

The Cold Weather Plan¹ is one of a suite of measures the Department of Health has implemented in order to make an impact on reducing mortality and morbidity due to cold weather and reduce the avoidable demand on the NHS. It builds on previous initiatives such as flu vaccination of those at risk, the Keep Warm Keep Well information campaign,¹² NHS winter pressures and resilience programmes and Winterwatch.¹³ The plan sets out what needs to happen to prepare for and respond to cold weather and avoid the negative health impacts. It

advocates collaborative working between NHS, local authority, communities and individuals.

Questions arise for frontline NHS staff and NHS organisations regarding their responsibility in delivering the Cold Weather Plan and what to do if an older person is suspected of living in a cold home or at risk of fuel poverty. In order to address these questions, this paper reports selected findings from the Keeping Warm in Later Life project (KWILLT), a qualitative study funded by the National Institute for Health Research, Research for Patient Benefit Programme. To date, policy and practice interventions to address fuel poverty and reduce the negative health impact of cold weather have focused on increasing household income available to afford fuel (eg, cold weather and winter fuel payments, accessing benefits for those eligible), reducing fuel cost (eg, introducing social tariffs for fuel, reduced direct debit/online payment rates, warm home discount) and increasing the energy efficiency of the property (eg, Warm Front¹⁴ and the planned Green Deal and Energy Company Obligation¹⁵). However, there is a concern that those most susceptible to the negative health impacts of cold weather are not always in a position to access initiatives or the interventions are not well targeted to those in most need.⁴⁻¹⁶ In addition, the contribution of health professionals to this agenda is not always clear. In order to improve access and uptake of interventions and clarify the contribution of health professionals, it is important to understand and identify influences the decisions of vulnerable older people in relation to keeping warm in winter. In this paper, data from the KWILLT study are presented and considered in order to provide insight into vulnerable older adults experiences of keeping warm and the implications for health services and health professionals.

There is a small but growing literature that does provide some insight into factors influencing vulnerable older people's home heating behaviour and barriers regarding keeping warm at home. How older people view and identify themselves in terms of vulnerability and risk related to cold weather has been examined. Evidence suggests older people may not respond to messages regarding safer temperatures or accessing affordable warmth interventions because they do not define or see themselves as old. Explanations for resistance to public awareness messages include age-related stigma, resistance of media representations of older people and conflict between policy and campaign messages with existing beliefs and behaviour.¹⁷⁻²⁰ There is an indication that older people may see extreme temperatures as something to 'put up with' and that little can be done to help outside of common sense, reactive behaviours such as wearing extra clothes and consuming hot food and drink.¹⁹⁻²⁰ Uptake and use of affordable warmth and heating installations by older people is also compromised by perceptions of central heating being unhealthy²¹ and the complex nature of attitudes to comfort.²² In an evaluation of the 'Warm Front' affordable warmth

installation scheme in England, preferences for low temperatures and a belief these make you hardy accounted for persistent cold home temperatures *after* installation.²² Fear of high fuel bills, and adversity in childhood and early adulthood, also explained frugality and low temperatures regarding heating.^{19 22 23} Factors usually associated with fuel poverty do not fully explain why some older people live in cold homes. Low temperatures in the home are not always explained by income and fuel cost and preferences for low temperatures not just held by those living in deprived areas.²² Questions have been raised regarding the adequacy of policy to address needs of diverse populations who are defined within policy as vulnerable on the basis of age alone.²⁰ The ability of policy and vulnerable households to be prepared for cold weather, as well as just react to it, has also been questioned.¹⁹

The environment within which vulnerable older people make decisions about home temperatures is therefore complex. KWILLT aimed to add to existing understanding and evidence and examine influences on vulnerable older people's heating decisions and behaviour. The aim was to explore extrinsic and contextual factors (income, fuel cost and energy efficiency of property) alongside intrinsic factors (values, beliefs, knowledge and perceptions) and how these two groups of factors interrelated. The purpose was to generate insight to inform the development of social marketing materials to increase the knowledge and awareness of the public regarding the risks of fuel poverty and cold weather and what can be done to help and to improve service access for vulnerable people. Social marketing is an approach used to develop activities aimed at changing or maintaining people's behaviour and encouraging behaviours that provide benefit for individuals and society as a whole.²⁴ Social marketing targets specific segments of a population that are at increased risk or vulnerability or who adopt certain behaviour. In this case, the concern is people who are cold at home and at risk of EWD. The aim was to promote change at a population and individual level.²⁵ Social marketing can involve interventions at various levels. In addition to public campaign and information interventions, social marketing insight can lead to redesign of services, environmental change and legislative or regulatory change.²⁶ The social marketing product that was developed and is discussed in this paper was a series of six 'pen portraits' that illustrated the complex interaction of the influences on older people in terms of keeping warm. The pen portraits aim to capture the diversity of experience and therefore the need for multifaceted response from policy and services.

This paper focuses on the study data from vulnerable older people and presents the insight that was generated to explain current vulnerability and need. This is used to consider how NHS clinicians and organisations can respond to better meet that need and how the pen portraits can be used to help.

METHODS

Study approach

We conducted a qualitative study in two stages incorporating in-depth, semi-structured individual and group interviews. The study was conducted in Rotherham, South Yorkshire, an area experiencing high levels of EWD and fuel poverty that are above the national average.^{6 27} The study area also has non-traditional and old housing stock that create challenges in terms of energy efficiency. NHS research ethics and governance approvals were obtained.

Sample and recruitment

Stage 1

In the initial stage, we recruited 50 older people who were vulnerable or potentially vulnerable to negative health impacts of cold weather and who were older than 55 years. The relatively young age of the older participants was selected because of the early onset of chronic disease and accelerated ageing experienced in the population due to the legacy of its industrial past, levels of deprivation and unemployment and behaviours such as smoking. With reference to the existing literature, recruitment was not just conducted in areas with the most deprivation populations and poor housing stock. Areas with the highest winter hospital admissions for falls, cardiovascular disease and respiratory complaints in older than 55 years groups were also included. This ensured the inclusion of those who may be asset rich (live in a large property) but cash poor (with limited income to heat, maintain or insulate the home), those who's vulnerability and behaviour may be influenced by preferences, perceptions and beliefs as well as those who were fuel poor. The aim was to recruit a diverse sample of older people vulnerable to EWD and the negative health impacts of cold homes, whether fuel poor or not.

Participants were recruited through older people's day care centres, community organisations working with vulnerable older people and local faith groups. Snowball sampling was also used to recruit isolated participants. This approach helped ensure that a range of participants in relation to key characteristics including age, gender, type and tenure of housing, living alone or with spouse/family, and fuel poverty. Participants were approached about the study by someone known to them, either the relevant organisation or a previous participant. Those who agreed were telephoned by the researcher to arrange the interview. The older people who participated in individual interviews included a range in terms of age, ethnicity and gender ([table 1](#)) and type and tenure of housing ([table 2](#)). There was an imbalance in the sample in favour of women and black and minority ethnic participants when compared with the population. Four interviews were conducted with couples. The majority conducted were with one person in the household.

Stage 2

Three focus groups were conducted with older people recruited from day centres or community groups.

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Table 1 Older people's demographic data

Age (years)	
55–69	14
65+	36
Ethnicity	
Black and minority ethnic	19
English	31
Gender	
Female	36
Male	10
Couples	4

Recruitment was conducted via the organiser of the group. [Table 3](#) gives a summary of the focus group participant numbers and gender and again demonstrates high participation by women.

Data collection

All individual interviewees were contacted by telephone by one of the research team to discuss the study and arrange the interview. Consent was obtained prior to the interview, which was digitally recorded. Interviews with older people were conducted in the winter months of 2009/2010 and 2010/2011. Interviews were guided by an interview schedule.

Group interviews with older people (n=24) were held between January and March 2011 and took place in community venues where the recruiting organisation or group usually met. Participant information and consent forms were posted out to participants by the organisation or group were possible. Full information was provided at the beginning of the group prior to the interview commencing and consent being obtained. A topic guide was developed based on the findings from stage 1 and used to guide the discussion. Two members of the research team attended the focus group, one facilitated the discussion and the other acted as a scribe. They were digitally recorded. Individual and group interview data were transcribed in full and any identifying data removed. Transcripts and field notes were entered onto NVivo8 software.

Data analysis

Data were initially analysed using a framework analysis approach.²⁸ Following this, social marketing techniques

Table 2 Tenure of property

Tenure	Number
Private owned	33
Private rented	5
Council	11
Sheltered	1

Table 3 Summary of focus groups

Focus group	Male	Female	Total
FGOP1	3	7	10
FGOP2	0	8	8
FGOP3	1	5	6
Total	4	20	20

FGOP, focus group for older people.

were applied.²⁶ All the interviews were analysed by one researcher (AL) and other researchers (AMT, CH, JMC) independently analysed selected transcripts to verify interpretation. NVivo8 was used to facilitate this using tree nodes, cross-linking, coding reports and memos. Following the individual interviews conducted in the first winter, interim analysis was conducted and a provisional thematic framework was developed. Following each subsequent stage of the study, the new data were used to challenge and expand upon the existing thematic framework. This occurred during regular research team discussions where consensus on the thematic framework was generated through negotiation. The thematic framework mapped out the information and awareness issues, behavioural factors and barriers to keeping warm ([table 4](#)).

For the social marketing stage, a series of research team meetings were held to review the thematic framework and underpinning data. The situational or contextual factors, attitudinal factors and barriers influencing heating decisions and behaviour were mapped out ([table 5](#)). Diagrams, charts and matrices were developed to aid interpretation. Factors and items that influenced behaviour were clustered together and organised using diagrams (eg, concept maps and maps of linked themes) and charts. When mapped out in this way, factors were merged and condensed down to identify key drivers and influences of behaviour and then compared back to the original data for verification. The final chart ([table 6](#)) contained the segmentation criteria identified through this process. Segmentation is a way of looking at the population of concern and identifying distinct subgroups or segments with similar characteristics, situations, needs, attitudes or behaviour. The criteria were used to develop the 'segmentation model' from which six 'subgroups' of older people were identified who were at risk of the negative health impact of cold weather because of contextual or attitudinal factors or barriers. These six groups form the basis for the pen portraits ([table 6](#)). Three pen portraits (Ben and Joan, Pat and Meena) provide insight into how factors may interact so that vulnerable older people who are fuel poor live in a cold home. Three others (Enid, Peale and Fred) present experiences of those who are not fuel poor. The number of participants who broadly fit within each pen portrait segment or subgroup is given in [table 6](#). The findings that informed the development of the pen portraits are presented here.

Table 4 Thematic framework: core themes and subthemes

Theme	Subtheme	Examples	
Awareness	Knowledge	Safe/recommended temperatures	
	Information	Health impacts of cold weather	
	Past experience	Using technology (heating, information and finance) Fuel payment and tariffs	
Behavioural influences	Age	Different generations > or <75	
		Mindset and values	Thrift Protective of privacy Protective of independence Hardiness and stoicism Pride Trust Fearful Prefer routine to change
	Social connections	Living with or near family/friends	
		Trusting of family/friends	
		Family/friends informed and supportive	
		Dependent/independent	
		Isolated	
		Income	
		Fuel costs	
		Household expenditure	
Barriers	Money	Heating, eg, boilers, programmers, central heating, controls, radiators, heaters. Communication, eg, information and campaign materials, media representations of older people, internet and electronic communication, digital displays.	
		Banking, eg, direct debits, online banking	
	Technology	Prefer cash Dislike credit Prefer post office Closing down of high street banks Electronic and online banking	
		Money and finance	Past experience fuel and payment visible (coal and cash) Now fuel and payment invisible (gas/electric and direct debit/online banking) Older people invisible in society Affordable warmth schemes and incentives invisible to older people
			Visibility
		Disjointed systems	

RESULTS

Factors influencing decisions and behaviour

There was a complex interaction of factors identified to explain whether people were able to or chose to keep warm. Influences combined in such a way that people were able to or preferred not to access help or change their behaviour. Behaviours and decisions related to using their heating, spending money, accessing cheaper tariffs, accessing benefits or asking for help. The three main categories of factors are situational and contextual factors, attitudes and values, and barriers.

Situation or context factors

The participants described how factors related to personal situation and environmental context affected how they were able to keep warm or not. People who

differ with regard to these factors will make different decisions regarding home heating. Key factors are listed/explained below and their importance illustrated in part by the quotes in [box 1](#).

Income

The participant's current and previous income influenced heating behaviour; for example, whether someone had been or was in fuel poverty or not, whether they have a history of living on a low income or being in debt, on a flat income or on a pension.

Age

The generation that a participant came from was seen to influence decisions and behaviour. If someone was of an older (80+) or younger generation (55–65), it impacted

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Table 5 Factors informing segmentation model development

Situation or context factors	Attitudinal factors	Barriers
▶ Money	Making ends meet	Awareness
▶ Age	Thrift	Knowledge
▶ Social connections	Competing priorities	Information
▶ Housing type and tenure	Pride	Experience
▶ Health	Struggling I can manage	Technology
	Thrift	Heating
	Hardiness	Information
	Stoicism	Banking
	It's my business	Disjointed systems
	Mistrust	Fragmentation or services
	Pride	Local differences
	Privacy	Lack of referral systems
	I'm frightened	Visibility
	Privacy	Fuel
	Personal safety/vulnerability	Money
	I'll stay as I am	Information
	Struggle with change	Older people
	Like routine	
	Fear	
	Trust	

upon the social norms and influences they had been exposed to or espoused regarding heating, familiarity to different heating technology, expectations regarding hardship, payment methods.

Social connections

How socially isolated someone was seen to influence knowledge, awareness and behaviour. This was partly because the socially isolated people lacked sources of information and help. However, some who were socially connected were exposed to and influenced by incorrect information from social contacts. When social connections changed, for example, bereavement, retirement or isolation due to illness, this created trigger points for older people to change heating behaviour and become vulnerable to being cold at home.

Housing type and tenure

Many of the most vulnerable participants were in privately rented housing as they lacked confidence, control and money to change their environment. However, some participants in social, privately owned and energy efficient properties were still cold because of the attitudinal influences and barriers identified below. In addition, some participants who lived in privately owned properties lacked the income or awareness to maintain the property and heating system and therefore its energy efficiency. A severe example was in privately

rented accommodation where bereavement had occurred and the surviving spouse had previously abdicated responsibility for home maintenance, operating the heating and payment of fuel to the deceased partner. They would therefore be at risk of cold.

Health

The underlying health status and frailty of an older person was seen to impact upon ability to keep warm. Some of the younger participants were among the most vulnerable because of physical and mental health problems and multimorbidities.

Attitudes and values

Numerous examples emerged to explain how attitudes, values and beliefs that were built up over a lifetime influenced decisions and behaviour. These interacted with the situational and contextual factors and the barriers in such a way that people would end up being cold at home. In order to explain how these worked, we 'clustered' attitudes and values that were developed from life's experiences. The 'clusters' describe a stance that would increase someone's risk of being cold. Participants were seen to ascribe to more than one cluster of attitudes and values. In combination, it was possible to see how someone might make decisions that result in them being cold, not accessing cheaper fuel tariffs or help available. While irrational to others, these decisions are sensible from the perspective of the participants and at the time were part of their way of coping with life.

"Making ends meet": This cluster describes people who value thrift, are proud and would not welcome interference or help from others would prefer to struggle on their own and keep independent, while managing competing priorities financially and make choices regarding money.

"I can manage": This cluster describes people who are also thrifty but who place great store on hardiness and stoicism. Part of their coping strategy would be to put a brave face on things and not publically be seen to be in need.

"It's my business": People in this cluster had learnt to be mistrustful of others by default. This, alongside pride and a deep-rooted desire to stay independent made them fiercely private and could lead to social isolation.

"I'm frightened": Some participants valued independence and privacy, but this was based on a fear of losing these and becoming dependent on others. Worries about personal safety, security of tenure and vulnerability exacerbated these fears and values.

"I'll stay as I am": This cluster described people who struggled with change and valued routine in their lives. This was partly due to fear and mistrust of others, whether individuals or organisations. They would keep their own council and keep things as they were, for example, methods of paying fuel bills and not changing to cheaper modes of payment.

Table 6 The KWILLT segmentation model and pen portraits

Segmentation group (number of participants who broadly 'fit' within the segment)	Pen portrait name	Description
Isolated and not wanting to cause a bother (5)	Pat	Low-income household and fuel poor, over 55, socially isolated and frightened, lacks information and understanding about keeping warm, private rented housing, long-term mental health problems (depression/anxiety)
Getting by cautiously (10)	Ben and Joan	Low-income household and fuel poor, over 65, some social connections but not well informed about keeping warm, privately owned house, one partner has chronic health problems
Dependent and poorly informed (10)	Meena	Low-income household and fuel poor, over 55, limited social connections, poorly informed about keeping warm, privately owned housing, poor health and mobility and very dependent on close family.
Just about managing (9)	Enid	Can pay for home heating but values thrift, over 70, some social connections but is private and trusts few people so is poorly informed about keeping warm, social housing, physical health problems and sensory impairment
Lonely and out of touch (6)	Pearle	Financially secure but lives in a cold home, over 70, widowed and socially isolated, poorly informed about keeping warm, privately owned house, physically well but bereaved
Proud and wants to be self-sufficient (10)	Fred	Low income but not fuel poor, over 70, regular but superficial social connections, poorly informed but values stoicism and hardiness and thinks he does not need any help, social housing, good health, minor ailments

Barriers

These were the obstacles that older people encounter that interact with keeping warm and make them vulnerable to the negative impacts of fuel poverty and a cold home. Four main barriers emerged (Box 3).

Awareness

Across all the participants, there were low levels of knowledge and awareness on why it is important to keep warm, what temperatures are recommended, where to get information from and how to access help. Some were not aware that cold had a negative health impact. Others adhered to beliefs that hot rooms or central heating was bad for you. This meant many people did not access or see as relevant the existing public information or campaigns.

Technology

Low levels of knowledge, experience and literacy regarding different technologies put some older people at a disadvantage when trying to keep warm especially regarding heating technology (boilers and programmers), information technology (internet and electronic media) and banking (direct debit and online payment systems). Others struggled with heating technology because physical or health problems created difficulty in reaching or using equipment, for example, reaching a boiler, seeing programmer settings or turning programmer dials.

Disjointed systems

Some of the most vulnerable participants lived in an unfamiliar world where structures, systems and

organisations had changed tremendously since their youth. This made it difficult to access them for help. One change was how fragmented things appeared. For example, the number of organisations involved in relation to keeping warm were vast, for example, energy companies, advice and grant awarding bodies, heating installations companies and contractors. People said it was difficult to navigate your way to information and support which meant if you tried to access something like a cheaper fuel tariff or initiative like Warm Front, you gave up or didn't bother trying. Many participants had lived most of their lives in solid fuel housing and with nationalised energy industries. The world of privatised energy suppliers was unfamiliar and bewildering.

Invisibility

Older people in our sample were used to solid fuel housing where fuel was tangible and payments were in cash. They found it difficult to make judgements about fuel use when fuel and its payment were invisible, for example, gas central heating and payment by direct debit. This increased the risk that an older person would self-disconnect or only heat one room due to fear of fuel debt.

DISCUSSION

The study has provided understanding of the complex environment within which vulnerable older citizens live and the factors that conspire against them being able to keep warm. The study provides some insight into why older people who are vulnerable and potentially at risk

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Box 1 Situational and context influences (gender/age/segmentation group)

Income

I haven't got a bank account that's got any savings in anyway. I've got one that it's, my husband's pension is paid into it, but that just about covers my bills, and there's nothing left over, you know what I mean? (OP8. Female/76/Isolated).

Age

But if it gets cold I put more clothes on or wrap a fleece round me rather than turn the heating up. That is always my last resort, to turn the heating up. I was trained to be frugal, it was part of my upbringing. You didn't have a lot so you were careful with what you did have. And with the costs rising now, I'm certainly not extravagant with the heating, I'm very wary (OP34. Female/76/Managing).

Social connections

My son-in-law says, his very words was take no bloody notice of the buggers [energy companies offering social tariffs], he says carry on as you are (OP21. Male/81/Managing) My sister is methodological ... she checks, she's online and she is following all the time and whichever is the cheapest ... a month ago we swapped from [energy supplier 1] to [energy supplier 2] ... she tracks them all (OP11. Male/65/Getting by).

Housing type and tenure

but in the sitting room where the telly is that, room is very, very cold. I mean they do put the heating on but still that room is very cold so he does suffer can't stay in that room for long (OP33. Male/77/Dependent).

It's cold but what can I do. If it's cold then I use it even if it's a bit risky. The council people will not help you because it's private now; I bought the property, I'm on a mortgage and council don't help private you know (OP6. Female/55/Isolated).

I said to the gas man can't you tell him [the landlord] that I want central heating putting in I'm frightened if I say anything to him he'll tell me to get out, you know what I mean (OP29. Female/59/Isolated).

Health

I've got health problems but I think it's the fact that I'm older now and my circulation's not as good as it was (OP16. Female/82/Lonely).

of being cold are not always able to make decisions to keep them warm. It reinforces and expands the findings of others who suggest factors such as low levels of awareness and knowledge regarding heating and that existing messages do not reach or connect with older peoples perceptions of themselves or their risk in cold weather, cold homes or cold-related illness.^{18–20 22 23 29}

The study provides additional insight into how underlying beliefs, perceptions and values of older people can influence heating decisions and result in behaviours inadvertently detrimental to health.²

As with Hitchings and Day,²⁰ the KWILLT study revealed a diverse range of behaviours related to keeping

warm at home, driven as they were by people's attitudes, values and past experiences. How the multiple influences, experiences and preferences play out in terms of individuals' behaviour varied across our sample. As with the previous study, many of the KWILLT participants felt they knew what was right for them. This may mean being frugal and thrifty with heating, layering up with clothes, and using heating less for themselves and more when visitors are present. However, valuing hardiness and ascribing to a belief that rooms that are too warm are bad for you emerged quite strongly from many KWILLT participants.

Previous research also indicates that talking about home heating and related anxieties may suggest that older people may not be coping and so were loath to discuss this.²⁰ KWILLT revealed similar anxieties. People revealed they were reluctant to ask for help in case they were seen to be struggling. Underpinning this was a pride in independence and a wish to maintain independence. However, many of the KWILLT participants did discuss heating, fuel tariffs and schemes such as Warm Front. These conversations were not always helpful as they escalated mistrust of related organisations (energy companies, local authorities and banks). In addition, the family and friends they discussed heating issues with often did not know any more than the participant and so could not provide advice.

The research builds on the assertion from other research that the diversity of subgroups mean current interventions (such as public campaigns) do not reach the full range of older people at risk of negative impacts of cold weather.²² This creates challenges for public health in terms of how to develop targeted messages that different target groups of vulnerable older people would find receptive. Some people did not see themselves at risk because they did not think of themselves as old and frail, instead they valued hardiness (box 2). They also considered their household warmer and more comfortable than that of their childhood and therefore not a hazard. This adds to the findings of others indicating that older people do not always consider themselves old and therefore health messages do not apply to them.^{19 20}

The KWILLT findings challenge assumptions about who is at risk from a cold home. For example, if the current definition of fuel poverty suggests people at risk are only those with limited income with hard to heat homes. However, this study shows that others are at risk because of the complexity of the type and interrelation of influences on behaviour. People who were not fuel poor were also at risk because of broader social, contextual and attitudinal factors. For example, some participants were in energy efficient homes but were cold because they could not use or reach heating equipment or did not understand how it worked (eg, Enid). Others were cold partly because they were bereaved and their spouse had been the person who knew and understood the heating system and fuel prices (eg, Pearle). In addition, the study demonstrated it was

not just the very old who were vulnerable. Some of the younger participants (55–60 years of age) were the most vulnerable because they lived on a low income, in privately rented accommodation, had mental and physical health problems, lacked the ability to access and understand information and were fiercely protective of their privacy. Also, some older people with family, who at first glance appeared supported and in decent homes, were vulnerable because of mistrust of energy companies and unfamiliar fuel payment methods, had family who

were uninformed, did not understand their heating systems and valued hardiness and thrift.

The segmentation model and pen portraits were a way of explaining the complex range of interactions and influences that play out in different ways in different vulnerable older people. The purpose in doing this was to help staff and organisations engage with and understand this complexity, recognise and assess those people who may be at risk and, as stated by Hitchings and Day,²⁰ realise that ‘there is no normal’.

Box 2 Values and beliefs (gender/age/segmentation group)

“Making ends meet”: thrift, pride, struggling, competing priorities

Interviewer: If you were eligible would you apply for grants?

I don't think so, no. I've always been independent. I don't think you should have to do [apply for grants]. That's why I say I think you should get, I mean on the Continent they all get better pensions, you know. I think we should have better pensions and there shouldn't be handouts because it's open, wide open to people not genuine which I know happens because I know people that do it.... I don't spend a lot. I don't go out to Bingo and things like that like some do and expect expensive holidays or anything (OP 16. Female/82/Lonely).

I think there's occasions when you'd have to go hungry to stay comfortable, but then on the other hand if you're feeling hungry you might think I'll sort of, I don't know, to hell with it I'll put another two jumpers on and have something to eat instead (OP 29. Female/59/Isolated).

“I can manage”: thrift, hardiness, stoicism

I mean growing up there would have been ice on the inside of the bedroom windows quite regularly because it would be really, really cold in the bedrooms in winter. So, I don't know, I think you are influenced to think a little bit, in our generation I think you tend to think they're [younger generations] a bit nannied. Talk about a nanny state, you know, but they're so coddled with everything and that it shouldn't really be much of a hardship to be cold occasionally (OP5. Female/58/Lonely).

I've never been spoilt, and I'm not bothered about being right warm (OP22. Female/84/Managing).

“It's my business”: mistrust, pride, independence, privacy

One of my other friends found what she thought was marvellous but it was an offer and she couldn't get it through her brain that it was an offer, and although they didn't say it was an offer, next year it came a lot dearer. I think the energies are wrong though because what they've done is they've made people never believe them any more about it's costing that, they're not putting it up just for their own greed or because they can get away with it.... we don't need to heat the whole house, we definitely don't need to heat the whole house. What I'm trying to say is that, I can put that on [gas heater] and that's plenty for me in the daytime, I don't want anything else, and therefore it can't be as expensive as heating the whole house (OP 27. Female/77/Proud).

The only help I ever get is people ringing me with unsolicited phone calls saying do you know about the grants that you can have? I don't want that because that's just somebody trying to sell me something. You know, I find it very confusing actually... I wouldn't use the internet for paying [energy bills] because I don't trust it... I mean there have been one or two haven't there, incentives from some of the big energy companies to sort of help you through insulating your home, you know, as a sort of financial incentive, but again I don't trust them. I think that whatever incentive they give us, they'll sneak it onto your bill, you know, across the board (OP40. Male/63/Getting by).

“I'm frightened”: independence, privacy, personal safety, vulnerability

I wear fewer clothes, but if it gets cold I put more clothes on or wrap a fleece round me rather than turn the heating up. That is, always my last resort, to turn the heating up.

Oh yes, because I was trained to be frugal, it was part of my upbringing. You didn't have a lot so you were careful with what you did have. And with the costs rising now, I'm certainly not extravagant with the heating, I'm very wary. I worry about my independence not my fuel bills. I don't want to be dependent (OP34. Female/76/Managing).

“I'll stay as I am”: struggle with change, like routine, fear, mistrust

I pay cash. I don't trust them [energy companies]; they might charge more with direct debit (OP6. Female/55/Isolated).

I don't believe in using [bank] cards because you have to remember so many numbers, and I don't believe in doing that, and I once said that at the bank, and she said well it's perfect, I says no it isn't. She says well you could come and use the card thing in the bank. I says yeah but if I'm coming in the bank why can't I stand in the queue and do it that way, I says at least you can have a moan to the person in front or the person behind about the weather or something, you have a little bit of conversation, whereas, you know.... well besides which when you pay by direct debit you've got no receipt (OP8. Female/76/Getting by).

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Box 3 Barriers (gender/age/segmentation group)

Awareness: of healthy temperatures, how to heat the home and energy efficiency

But not too warm, that's unhealthy isn't it? (OP34. Female/76/Managing).

If you get overheated it makes you feel ill" (OP27. Female/77/Proud).

Interviewer: Why do you prefer to use the gas fire and not central heating? "Because it's economical. Central heating is expensive. Rather than put in a central heating with seven or eight radiator, it's cheaper to just warm one room instead of all the house (OP 31. Male/67/Getting by).

I can remember my grandma saying, you know, as long as you keep one room warm and stay in there (OP29. Female/59/Isolated).

Technology: heating, information and banking technology

Sometimes I feel quite cold, and I don't know why that is. The radiators were altered when Warm Front came in ... I don't know how to work that one [boiler] in there. That's why I just said to him [heating engineer], when he set it for me, I said look I want to work it manually. I want it going off and coming on when I want to do it. So I just work from the thermostat in the hall and just come down in the morning, switch it on, and when I go up at night I switch it off. You know, so I don't know the first thing about working that boiler (OP1. Female/71/Isolated).

The boiler got something wrong with it. I never use it love (OP24. Male/84/Dependent).

I don't actually have to touch the boiler; I've got a switch on the wall in the hall that I can regulate it with I can't actually set it (OP37. Female/76/Proud).

I haven't got a computer, I don't want a computer, I can't get online, so therefore I am barred from 90% of things [cheaper fuel tariffs] because I'm not computer literate (OP8. Female/76/Getting by).

Disjointed systems

... energy pricing as well, the fact that there are many suppliers and it's not, again it's not transparent. It's difficult to weave through it all (OP40. Male/63/Getting by).

I stopped with the same one. I don't want any hassle. I don't think I would change, no. I wouldn't like the hassle, no, because nothing's straightforward (OP16. Female/82/Lonely).

Invisibility: cost and use of fuel is invisible now compared with coal

I mean because we have had coal fires, I mean I used to love making coal fires. Yeah but we had coal fires, that's what they were there was no, central heating were rare weren't it (OP11. Male/65/Getting by).

LIMITATIONS

The main limitation of the study is that it was conducted on a single site. This could restrict the transferability of findings.

Box 4 Assessment questions

Patients may be vulnerable to the negative health impact of cold weather if they answer no to question one or yes to question two or three

- Is your whole house warm in winter?
- Do you have difficulty paying your energy bills?
- Do you have difficulty heating your house?

Expected impact on the relevant field

An aim of the study was to develop findings and social marketing outputs that could inform staff, services and organisations in addressing EWD and implementing the Cold Weather Plan. The first challenge for health and social care staff is to identify those older people who are vulnerable to cold-related ill health, even if not fuel poor and those whose vulnerability may not be apparent, for example, they do not see themselves as old or frail, and place pride in their independence and hardiness. The pen portraits and social marketing segmentation model provide an instrument to assist by identifying six 'types' of older people who are at risk of being cold for different reasons. The pen portraits can be downloaded from the internet and used to help health and social care staff understand the range of people at risk and identify and assess them.³⁰ The pen portraits can be used by staff from various sectors, not just health, for example, housing advisors, fire and rescue, debt advisors and community groups. For those involved in identifying older people who are at risk or vulnerable to cold homes, they can first consider if any patients, clients or contacts fall into the broad segments or subgroups. For example, clinical staff can consider the factors contributing to vulnerability that are highlighted in the model and pen portraits. The segmentation criteria highlight characteristics that make older patients potentially vulnerable to not being able to keep warm at home. These can be used to assess potentially vulnerable patients when administering routine interventions, for example, flu vaccinations or chronic disease management clinics. The National Energy Action recommends that an easy way to assess risk is to ask three simple questions that can easily be integrated into routine contact (box 4). The pen portraits are currently being used in staff training in South Yorkshire. Open access E-learning materials are also being developed and will be available for winter 2012.

The second challenge for busy front line staff is to know how to help those identified as vulnerable in terms of keeping warm. In England, there is now a strategic requirement for public health, newly formed Health and Wellbeing Boards and Clinical Commissioning Groups, to ensure that clinical staff are supported by appropriate systems and processes in line with the requirements in the new Cold Weather Plan. The new Public Health Outcomes Framework also requires these groups to

address EWD and fuel poverty as a public health priority.³¹ This means, if mechanisms exist to identify a vulnerable person, mechanisms and services also need to be available so that they can be referred for appropriate help. Partnership referral schemes can help with this but such schemes need to be responsive, particularly if clinical staff are going to engage with them. An example is the South Yorkshire Hotspots scheme. This partnership involves NHS departments, Local Authorities, Pension Service and Fire and Rescue Service. Staff assess and refer people to a range of support and service including home safety checks, pensions and benefits assessment and affordable warmth interventions. The KWILLT pen portraits can be used at a strategic level, to help organisations think through what referral processes need to be in place, how they can work and who has responsibilities to make this happen. As indicated in the Cold Weather Plan, Health and Wellbeing Boards are in a good position to coordinate this strategic response.

It is clear that health services cannot work alone in meeting the needs of vulnerable older people and avoiding preventable winter deaths and illness. Strategic partnerships with local government, voluntary and community groups are essential to open up referral and access to community services. An Affordable Warmth Strategy Group that reports into the Health and Wellbeing Board will help to achieve the required partnership and boundary spanning approaches.³² Interventions such as older people's energy champions or energy coaching, that adopt health trainer and health champion models, can be an invaluable referral option to clinical staff.³³ They can provide the information, support and help required to increase awareness, address inaccurate beliefs, change mindsets and increase access to help the broad range of older people captured in the pen portraits. A broad but coordinated partnership that involves health and social care but adopts a boundary spanning approach will also help to build capacity and awareness within communities where those at risk live. KWILLT indicates how social isolation and poorly informed families can worsen the risk of cold-related ill health for vulnerable older people.

Importantly, our findings indicate that neither partnerships nor practitioners can rely on risk assessment and interventions alone since many people in receipt of home improvements remained cold. As public health delivery in England shifts to an outcomes based approach, it is critical that front line staff visiting older people take the opportunity to provide information about safe temperatures and check ambient temperatures in the home, particularly during cold spells. By building cold weather messages into initiatives like the NHS 'make every contact counts',³⁴ the broader health workforce, not just clinicians, will be able to deliver basic health messages and signpost people to further support.³⁵ In this way, messages may become accessible to people who would not ask for help because they are proud or isolated. Increasing the range of people who

are delivering basic messages or signposting increasing the chance that older people will obtain information from people they trust.

Finally, we consider that our research has implications for the implementation of aspects of the new Energy Bill, particularly the Green Deal and the Energy Company Obligation,¹⁵ which will target energy efficiency measures at vulnerable people on low incomes and those in hard to treat housing. For example, the reluctance of some older people to deal directly with energy companies because of perceived lack of trust may suggest that an 'honest broker' may help them access entitlements.

CONCLUSIONS

The policy and economic environments regarding cold weather and health are continually changing. As fuel poverty levels and fuel costs continue to escalate, there is an ever increasing need to address some of the barriers and drivers to decision making that make older people susceptible to preventable winter death and illness. While this is challenging, there are opportunities. The current Health and Social Care Bill moves directors of public health and their teams to local authorities, thus aligning them with local government housing, energy, environment and adult services. KWILLT provides insight of value in informing the NHS and Health and Wellbeing Boards at a strategic as well as clinical level, in responding to the needs of older people. If we become more efficient in identifying those at risk, improving access to help and close the loop by ensuring our interventions result in warmer homes, there is potential to make an immediate public health impact by reducing EWDs and avoidable cold-related NHS use.

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Contributors AMT and TR had the idea for the study. AMT was principal investigator, participated in data collection and analysis, and wrote drafts of the manuscript. AL took the lead for the data collection. AL, JMC, JA, KAM and AJS helped design the study, develop the methods, collected and analysed the data, and helped with interpretation. All authors have seen and approved the final version of the manuscript. AMT is the guarantor.

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Understanding factors influencing vulnerable older people keeping warm and well in winter: a qualitative study using social marketing techniques

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