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**The experience of potentially vulnerable people during cold weather: implications for policy and practice**

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## **Abstract**

### **Objectives**

To examine the experience of potentially vulnerable people during cold weather to inform interventions aimed at improving wellbeing.

### **Study design**

Qualitative study.

### **Methods**

Telephone interviews with 35 individuals who could be considered to be potentially vulnerable during cold weather. Individuals were interviewed on two occasions during the winter of 2012-13, one or two days after a level 3 cold weather alert as defined by the CWP had been issued.

### **Results**

Participants were largely unaware of the health risks associated with low temperatures, especially cardiovascular risk. There was a clear distinction between the thermal experience of people in social housing, which was newer, had efficient heating, was well insulated and well-maintained, and owner occupiers living in older, harder to heat homes. Most participants relied on public transport, and many faced arduous journeys to reach basic facilities. Vulnerability to cold was mediated to a significant extent by practical social support from family members.

### **Conclusions**

Resources should be targeted at people in hard to heat homes and those that are socially isolated. The repertoire of initiatives aimed at reducing cold-related mortality and morbidity could usefully be augmented by efforts to reduce social isolation and build community resilience.

### **Keywords**

Cold weather, older people, social support

## **Introduction**

Since 2011 the Department of Health has published the National Cold Weather Plan (CWP) which aims to protect the population from harm during periods of cold weather and sets out a range of ‘best practice’ local and national action.<sup>1</sup> The CWP covers the spectrum of action from planning to emergency response. The CWP was revised in 2014 to take account of research that found that the adverse effects of cold temperature on health can occur at relatively modest temperatures (Hajat et al this volume), suggesting that long-term interventions and the more general preparation for winter was more important than reactive interventions undertaken in response to severe weather.

Interventions aimed at improving the wellbeing of vulnerable people include modifications to improve household warmth (e.g. loft insulation) and efforts to increase the income of older people (e.g. encouraging individuals to claim benefits). Many local authorities also distribute ‘warm packs’ to residents considered to be vulnerable during cold weather (the contents vary but might include such things as a blanket and slippers). Concerns have been raised about the effectiveness of these interventions.<sup>2,3,4</sup> One concern relates to the approach taken to identifying ‘vulnerable people’. Many initiatives use receipt of ‘passport benefits’ as a proxy for vulnerability. However, this has been found to exclude many people who are vulnerable to cold weather (because they are not eligible, or do not take up these benefits) whilst including many who are not.<sup>2</sup> This paper reports a study of 35 older people interviewed within two days of a level 3 cold weather alert as defined in the CWP (temperature <2°C and/or widespread ice and heavy snow). The aim of the study was to examine the experiences of potentially vulnerable people during cold weather to inform interventions aimed at improving wellbeing.

## **Methods**

In conducting the research we were guided by the COREQ criteria for reporting qualitative research<sup>5</sup>. Semi-structured telephone interviews were held with 35 people in two localities. One site was an urban area in the Midlands where 15 people were recruited by a social research organisation (door-to-door). The second was a rural locality in the North of England. Ten people were recruited by a social research organisation and ten people were recruited by the local branch of Age UK. A purposive sampling strategy was used to find participants from groups that research suggests are particularly vulnerable to cold weather.<sup>1</sup> The groups chosen were people aged over 75 years and living alone, people aged over 90 years (not necessarily living alone) and people over 65 years with a long term health condition (including chronic obstructive pulmonary disease, chronic bronchitis, asthma or an existing heart problem). In the Midlands urban locality, at least three people recruited were of

Asian origin; in the Northern locality, at least half of the recruits lived in a rural area. Participants who agreed to take part were given a £20 honorarium in recognition of their time commitment.

Each individual was interviewed on two occasions during the winter of 2012-13, one or two days after a level 3 alert had been issued according to the CWP. The initial stages of the interview were unstructured, on the broad topic of how interviewees were managing in the cold weather. The intention was to capture the respondent's priorities and frameworks of meaning.<sup>6</sup> Toward the end of the interview, probes were used, if necessary, to introduce any of the following topics not already covered: extent and nature of contact with health and social care professionals; contact with other agencies and organisations including non-governmental organisations; contact with and support provided by family, friends, neighbours; nature, extent, functioning and use of home heating; experience going out; supplies (e.g. adequate supplies of food, fuel, medication, warm clothing and footwear); and critical incidents (e.g. falls, illnesses).

Content analysis was undertaken to identify recurrent themes<sup>7</sup>. Analysis involved both inductive and abductive inferences in a process that involved either subsuming data under existing categories, derived from previous research and current policy, or assigning new categories on the basis of surprising or unexpected incidents of data<sup>8</sup>. Interviews were digitally recorded and transcribed and imported into a computer software programme (NVIVO) to aid analysis by facilitating coding and retrieval of segments of text linked to particular codes. By 'coding' we mean marking incidents of data that might be relevant to our emerging interpretative categories<sup>9</sup>. One researcher (LJ) read each interview transcript several times, compared transcripts and returned to previous literature, noting down emerging ideas. These ideas were discussed with the other researcher, elaborated and refined to produce an analysis structured around six themes (*strategies for keeping warm in cold weather, home heating, advice on help available during cold weather, fear of falling, reliance on public transport, and the importance of instrumental social support*). The following analysis is based on the entire data set. Ethical approval was obtained in November 2012 from the Observational Research Ethics Committee of the London School of Hygiene & Tropical Medicine.

## **Results**

### *Strategies for keeping warm in cold weather*

All the individuals in the sample had taken steps to keep warm. These included wearing additional layers of clothes, and thick boots and a hat if they were going outside. Participants had also made preparations in anticipation of cold weather, especially those living in the rural area, most often

stocking up on food and fuel. All respondents made a point of listening to the weather reports on the TV or radio.

### *Home heating*

For all respondents, keeping warm was a priority and most therefore kept the heating on during cold weather even though it was expensive. There were exceptions, for example, one woman turned her heating off during the day because of the expense. There was, however, a universal preference for not having the heating on at night. The reason was comfort. Most respondents said that they that they felt warm in their beds at night, although many mentioned that they would get up several times during the night to use the bathroom.

Among study participants, there was a clear distinction between the experience of participants in council or housing association accommodation and owner occupiers. Respondents who lived in housing provided by the local authority or by housing associations reported feeling warm, had central heating and insulation, and repairs undertaken quickly. In contrast, owner occupiers reported inefficient heating systems. Study participants in the rural part of the Northern locality, in particular, tended to live in older properties that were not on mains gas so that they relied on other fuels such as electricity, wood, coal or oil.

### *Advice on help available during cold weather*

At the time this study was undertaken financial assistance available to potentially vulnerable people included additional means-tested benefits, government-funded grants towards insulation and heating improvements and rebates from energy companies. Respondents were asked if they had seen any information about help available during cold weather such as financial assistance. This question clearly made some people feel uncomfortable and was often met with a response along the lines of, 'I wouldn't know about that', perhaps reflecting a desire to appear independent.<sup>10,11</sup> However, many respondents spontaneously mentioned that they had received helpful advice or assistance from Age UK (this was not confined to people from the group of interviewees identified by Age UK). This may reflect a preference for engaging with the voluntary sector rather than statutory services.<sup>12</sup> Specific help that had been received from Age UK included help obtaining benefits, including completing forms, and advice on fuel providers with discounted tariffs for older people and contact details for local trustworthy 'handyman' services to undertake repairs. In one locality, the local Age UK branch also provided a cafe which was a popular location for socializing.

### *Fear of falling*

Interviewees sought to keep warm primarily for comfort and in the belief that the cold could exacerbate existing health conditions. There was no indication that interviewees had any knowledge of the cardiovascular risk associated with cold temperatures. The exception was one woman whose partner had died of a heart attack whilst outside on a cold day. This woman observed that ‘my partner died because of the cold’. The greatest concern during cold weather was slipping on ice and falling. To prevent this, individuals tended to stay inside when they believed there was a risk that they could slip. Respondents reported that although the council were often quick to grit the roads, footpaths were not gritted, even in areas that were predominantly bungalows for older people. Although respondents tended to stay inside during icy conditions when they perceived there was a risk of falling, social activities were of great importance which, together with a dislike of being ‘stuck in’, led to people going outside as soon as it was considered safe to do so. Reasons for being outdoors during cold weather included property maintenance and attending to livestock, walking, swimming, shopping, voluntary work, and visiting social clubs and day centres.

### *Reliance on public transport*

Participants’ accounts revealed that transport was a key concern. Participants from both the urban and rural locations described journeys that involved a complex combination of buses and walking or else the use of taxis. In the rural Northern group, the absence of local facilities increased the need to make arduous journeys using public transport. This is illustrated in the following conversation between the interviewer and a woman from the Northern locality about thermal underwear:

*Participant: Where do you get them from?*

*Interviewer: Marks and Spencers.*

*Participant: We’ve got a Marks at (Town A) and I could get a minibus to (Town B). You only get five miles and then I get on a ‘Link bus’, I’ve got a bus pass and the bus pass will take me to (Town A) and I could walk to Marks and Spencers and everything’s fine and hunky dory I would imagine. I would think that is probably the best thing because today when I went out to get the coal and the logs, the bitterness of the cold around the bottom of my back, although I’ve got warm clothes on, I think thermals is what I need.*

### *Importance of instrumental social support*

Many of the participants had family who lived close by and who were a source of instrumental support during periods of cold weather. In one instance, a couple’s boiler failed leaving them with no heating during a period of very cold weather. However, the couple had a nephew who was a plumber and able to repair it. Other examples of instrumental support from family members included car journeys to do shopping or attend the hospital; delivering groceries and cooking meals; social outings



such as family meals; household repairs such as draught proofing; help with learning how to use a computer and the internet; and advice on heating technology.

Some interviewees also reported having good neighbours who would drop by to see if they needed anything. One reported that on one particularly cold Friday night their neighbours had brought round fish and chips. It was clear that some respondents lived in a neighbourhood with a culture of neighbours helping older people during cold weather. However, such neighbourhoods tended to comprise predominantly of older people, so that the 'old' were helping the 'older'. Indeed some of the people we interviewed mentioned 'keeping an eye on' their neighbours and providing help, such as clearing footpaths. One woman who lived in a neighbourhood with a greater mix of ages received no help from her neighbours. This she attributed to the fact that her neighbours had other commitments such as work and children. In the absence of family, flexible personal care was highly valued. For example, one woman said of her privately employed carer:

*Well she is a proper carer. She cares for the person. She's doing something for that person but it's got to be everything that person needs; whatever is needed. No exclusions. My carer does it.*

The following example illustrates the interplay of different factors that influence people's ability to be warm in the home. On contacting a 76 year old man following a level 3 cold weather alert, he reported that he had not received his pension. He had contacted the relevant authority and was told that this was due to a technical problem with the computer system. However, as a consequence he was unable to put money into the prepaid meter that controlled his electricity and therefore had no heating. When the interviewer called the following day he still had not received his pension but had managed to borrow £5 to put on his electricity meter. A recent report on fuel poverty observed that people on low incomes often have the most expensive methods of payment.<sup>13</sup> In this case the combination of low income and a prepaid meter left him particularly vulnerable during cold weather. However, this vulnerability was mediated by informal social support in that he was able to borrow some money to put in the meter.

## **Discussion**

There was a clear distinction between the thermal comfort experienced by participants who lived in social housing which was newer, had efficient heating, was well insulated and well-maintained, and that of owner occupiers living in older, hard to heat homes, which in rural areas were often not connected to mains gas. Participants were largely unaware of the cardiovascular risk associated with low

temperatures. The greatest concern was falling and all sought to avoid this by staying inside during icy conditions. Nonetheless, when it was thought to be safe to do so, people went outside, for shopping, exercise, to socialise or simply to ‘get out’. Most relied on public transport and many faced long and arduous journeys involving a combination of walking and buses to access facilities. The habit of venturing outdoors when possible, and the nature of journeys for those who relied on public transport, were important sources of exposure to cold temperature. Many people had received practical support from family during periods of cold weather such as car journeys for shopping or hospital trips, delivering groceries and cooking meals, and help with household repairs, using the internet and using heating technology. This support was crucial to participants’ health and wellbeing in winter.

Unlike many causes of mortality and morbidity, cold-related mortality and morbidity does not show a socio-economic gradient.<sup>14</sup> Wilkinson et al concluded that ‘the observed lack of socio-economic gradient suggests that the risk of winter deaths is quite widely distributed in elderly people, which therefore may limit the health impacts of initiatives that are targeted only at low income households’.<sup>14</sup> One reason for the lack of socio-economic gradient is that housing is of a better standard in the social sector than in the private sector.<sup>15</sup> The link between the quality of housing in the social sector and winter health outcomes was confirmed by a study that found that private renters and home owners were at a significantly increased risk of excess winter mortality compared to social housing tenants.<sup>16</sup> Another study found that individuals from ‘better off retirement areas’ had the highest excess winter morbidity rates.<sup>17</sup> The authors suggested that in this case older people in larger and harder to heat homes were at greater risk of adverse winter health outcomes. These findings were reinforced by our study which found a clear distinction between the reports of people living in council or housing association properties and the experiences of owner-occupiers.

Previous studies have suggested that there may be individual ‘cultural’ or behavioural factors that increase an individual’s vulnerability during cold weather, such as a preference for sleeping with the window open in winter.<sup>3,18</sup> These factors were not so much in evidence in this study, except that there was a distinct preference for not having the heating on at night. Whilst many respondents reported feeling warm in bed at night some also reported getting up several times during the night which may potentially expose them to cold temperatures. As turning the heating off at night was a personal preference, on the grounds of comfort, simply recommending that people keep their heating on is unlikely to be effective. However, this finding is a further indication that people living in hard to heat homes are likely to be particularly vulnerable during cold weather.

Keatinge<sup>18</sup> has suggested that exposure to external temperatures may be a significant cause of winter mortality. Most of the older people that we interviewed relied on public transport. In rural areas, in

particular, individuals faced convoluted journeys involving a combination of different buses and walking to access basic amenities such as food shops. Periods spent walking or waiting for buses was thus an important source of exposure to cold temperatures. In line with the findings of Gascoigne et al<sup>19</sup>, there was also little knowledge of the effect of cold external temperatures on cardio-vascular health.

A key finding from the interviews with people at risk during cold weather was the way that an individual's risk (based on age or the presence of pre-existing illness) was mediated by social support. Social support has an influence on health outcomes across a range of conditions<sup>20</sup>. For example, social support helps people better to manage their chronic health conditions<sup>21</sup> and has been found to be an important determinant of survival after a major health event such as a myocardial infarction<sup>22</sup>. A systematic review of the literature evaluating the effectiveness of interventions aimed at providing social support concluded that the most effective interventions are those that involve social activities, or group interventions with an educational element, rather than one to one interventions<sup>23</sup>. It is likely that social activities or group interventions facilitate the formation of friendships that provide instrumental social support when needed and offer opportunities for reciprocity that are valued by many older people<sup>24</sup>.

Previous research suggests that interventions aimed at improving the winter welfare of older people require sensitive engagement strategies so as to effectively recruit participants and not cause offence.<sup>2,25,26,27</sup> The CWP encourages agencies to ask individuals questions such as 'can you afford to heat your home' and 'can you afford your fuel bills'<sup>1</sup>. However, research has found that both professionals and the public may find these questions embarrassing and intrusive.<sup>2,28,29</sup> A narrow focus on economic deprivation is also insufficient to identify those at most risk during cold weather. The findings from our study suggest that social support mediates an individual's risk to exposure to cold temperatures. Conversely, this suggests that those who are socially isolated are at particular risk. This suggests that social isolation is likely to increase vulnerability during periods of cold weather. Another notable finding was the way a fear of falling during periods of cold weather led people to stay indoors, exacerbating social isolation. In the UK, social isolation has been found to predict hospital admission for respiratory disease in winter.<sup>30</sup> Thus assessing a person's degree of social isolation could be a more effective way to prioritise people who are vulnerable during cold weather.

Our findings underline the value of initiatives aimed at building thriving local communities with facilities and social groups (libraries, shops, cafes, cultural events, voluntary groups, swimming classes, book clubs etc) that counter social isolation by providing both formal and informal opportunities for social interaction. Initiatives aimed at increasing the local provision of instrumental social support have the benefit of addressing the *multiple* ways that people are vulnerable to cold weather. For example,

support in the form of advice on heating technology can improve household warmth while providing transport reduces exposure to external cold temperatures. Of concern then are recent findings that pressures on local budgets have led commissioners to retrench from a focus on long-term planning and prevention to fire-fight more immediate pressures.<sup>31</sup>

A key challenge for local agencies is identifying people who are potentially vulnerable during cold weather but who are not known to services. One approach adopted by some localities is to remind any staff who come into contact with the public, for whatever reason, to ‘keep an eye out’ and to signpost or refer people they are concerned about.<sup>32</sup> The effectiveness of this approach is, however, curtailed by budget pressures which have reduced the number of people receiving services. It has been calculated, for example, that since 2005 there has been a 39% decrease in older people receiving state-funded services.<sup>33</sup> The ability of managers to influence the behaviour of front-line staff is also influenced by the transfer of some services to the private sector (e.g. post offices).

In conclusion, this study of the experiences of potentially vulnerable older people during cold weather provides a nuanced picture of vulnerability during cold weather that can inform policy and practice. During cold weather people in hard to heat homes are at risk of adverse outcomes, but this is not necessarily linked to socio-economic deprivation. One reason for this is that owner occupiers and private renters are more likely to be living in cold homes than people in social housing. Older people who rely on public transport are exposed to cold external temperatures, especially in more rural areas where people face convoluted journeys to access basic amenities. However, in both cases vulnerability is mediated by social support. The implications for policy are that resources should be targeted at individuals in hard to heat homes and those that are socially isolated and at initiatives aimed at reducing social isolation and building community resilience.

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