

Cold homes during the winter period in the UK

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Perspective on cold homes during the winter period in the policy debate of the UK

The UK policy arena actively recognizes the impacts of cold homes on public health; indeed the initial UK fuel poverty policies have been labelled “first and foremost public health policies.” (Scottish Government, 2017 p.86). The political response arose following the initial conceptualisation of “fuel poverty” in the late 1970’s, driven by the phasing out of gas and electricity subsidies and the 1973-74 oil crises. The concept gained traction in the following years with a definition from Isherwood and Hancock in 1979 and a continued development of the theme leading to Brenda Boardman’s notorious quantification of the condition in 1991 (Koh et al., 2012). The 1997 election of the Labour party transitioned fuel poverty into a distinct political issue where it had previously been considered under the umbrella of general poverty (Koh et al., 2012). A study observing trends in household energy consumption between 1970 and the early 2010’s observed increases in average temperatures within UK homes and a general shift in the expectations of domestic consumers in regard to thermal comfort. Average temperatures in homes with central heating have risen from 13.7°C to 17.7°C and from 11.2°C to 16.5°C in homes without central heating (Palmer and Cooper, 2013).

Analysis of more recent UK policy documentation demonstrates a continued reflection of health vulnerabilities in the policy response. For example, a 2015 catalogue identified 75 health-related fuel poverty schemes in England (DECC, 2015). A recent review of the fuel poverty definition in Scotland reflected a desire to account for health vulnerabilities in the revised definition (Scottish Government, 2017).

Additionally, public health documentation outlines a series of health conditions including respiratory and circulatory conditions as well as the mental health impacts associated with fuel poverty (Public Health England, 2014). There is also a recognition that the average number of excess winter deaths (EWDs) linked to cold homes is disproportionately high in the UK (Public Health England, 2014) where the rate of EWDs is the sixth highest out of 30 European countries (Guertler et al., 2018). The high rate of EWDs is particularly surprising given the UK's long history of mitigating fuel poverty and relatively high rates of central heating ownership (E3G, 2019). UK Governmental literature recognizes that a proportion of EWDs are preventable and that improving temperatures in homes through improved energy efficiency could reduce the number of EWDs (NICE, 2015). Implementation of such mitigation measures could both improve public health and reduce NHS costs by an estimated £1.36 billion (Guertler et al., 2018).

It has been estimated that 10% of EWDs can be attributed to conditions of fuel poverty in the home (Guertler et al., 2018). Alleviating fuel poverty is therefore intrinsically linked with the alleviation of the health conditions associated with cold homes. The traditionally recognized drivers of fuel poverty in the UK are income, energy price and energy efficiency. UK policy therefore principally addresses fuel poverty by targeting these three drivers.

Given that improvement of inefficient housing stock also reduces carbon emissions, there is a strong incentive for the UK Government to implement efficiency-based policies. Energy efficiency measures also generally lead to energy bill reductions. For example, a post evaluation of the impacts of the Kirklees Warm Zone project which insulated 51,000 homes with insulation between 2007-2010, showed that there was an average energy bill saving of 10.6% for the average participating household. The insulation also resulted in reduction of 11.8% of average carbon emissions from the total energy consumed within households (Webber et al., 2015). The potential of efficiency upgrades to reduce energy bill costs was highlighted in the launch of the 2020 Green Homes Grant (BEIS, 2020). Taking the above into account, it is possible to split the UK policy response to fuel poverty, and through this the approach to cold homes into three categories (Table 1) - the first being those specifically offering financial aid towards winter heating costs, the second being energy efficiency improvements, and the third being policies which combine energy efficiency and renewable installation/uptake initiatives for cost saving. Efficiency improvements may not always coincide with net cost savings if householders bear the cost of the installation or if the home did not previously have climatization equipment installed.

Table 1. UK Fuel poverty alleviation policy methods. Adapted from Mahoney et al (2020).

Policy method	Policy mechanism
Financial aid towards heating costs	Automatic payments based on householder age criteria
	Automatic payments issued for prolonged periods of low temperature
	Automatic payment of energy bills
	Energy price caps
Efficiency improvements	Loan availability for energy efficiency improvements, repaid through energy bills
	Installation of household improvements including central heating
Combined efficiency & renewable installation/uptake for cost saving	Energy saving and bill advice
	Efficiency improvements funded by energy companies
	EPC grading improvements by a threshold year
	Renewable heating sources for remote communities
	Increase uptake of low carbon heating

The policies presented in Table 1 demonstrate a level of commitment by the UK Government to reducing the impacts of cold homes on their occupants. The mechanisms employed are diverse and therefore have the potential to capture a wide group of vulnerable consumers. While financial aids towards heating costs tend to be administrated by the Government, efficiency schemes have the tendency to be privately administrated. These schemes operate on a range of scales, from national to local.

While there are several efficiency-based targets in the UK, two key policies are the Green Deal and Energy Company Obligation (ECO) schemes. Between May 2015 and February 2019, 852,000 households had installed an improvement measure under either of these schemes (BEIS, 2018). In the case of the Green Deal, companies must be Green Deal approved; customers are able to check the authenticity of the company on a Government webpage (UK GOV, 2020). ECO installations are funded by energy suppliers as part of their "supplier obligations" in terms of climate change mitigation and fuel poverty alleviation (Ofgem, 2020a). Suppliers are obligated according to the number of domestic customers they serve

and the amount of energy they supply. These criteria are reviewed and updated systematically (Ofgem, 2020b).

The Government perspective on these schemes is that they are beneficial in terms of their ability to make homes warmer and heating more affordable. Further positives include the creation of skilled employment opportunities in the small and medium sized business sectors (BEIS, 2019). Despite the advantages of these schemes, some adverse effects of the Green Deal were a subject of debate in the UK parliament, specifically given that the measures were installed by private companies there were issues around quality control, consumer protection and the overselling of energy bill savings (HC Deb 23rd October 2018).

Research perspective on cold homes during the winter period in the UK

The research perspective on cold homes centres on excess winter deaths, impacts on health and social services, physical and mental health, energy efficiency and the administration of alleviating policies. While the UK policy response to cold homes is comparatively mature in the European context, cold homes still present a significant problem (Sovacool, 2015), (Middlemiss et al., 2015). Particular concern focuses on the levels of resources dedicated to mitigation policies, the time frames involved, amendments to targets and the type of eligibility criteria utilized to decide which homes are included (Gillard et al., 2017).

The issue of excess winter deaths in the UK is highly contentious, with sources arguing that deaths related to cold homes are preventable, a perspective shared within academic and non-governmental research (Guertler et al., 2018; Age UK, 2015; The Marmot Review, 2011). Other sources have also highlighted that physical health conditions can be alleviated by increasing warmth in the home (Thomson et al, 2013). The leading contributors to cold homes are identified as an inefficient housing stock, a relatively poor space heating affordability ratio and the poor state of repair of many UK homes (ACE, 2015).

Extreme winter weather conditions are another cause of concern within the research community, for instance the winter of 2017-2018 saw extreme cold snaps which stretched health services and where the conditions in hospitals were described by medical staff as "third world" (BMA, 2018). During this testing period there were instances when patients who had been hospitalized were discharged prematurely into homes they were unable to heat, resulting in re-admittance (NEA, 2018). In fact, it was reported that one in twenty hospital admissions was likely to be a repeat admission (Triggle, 2018). The UK Cold Weather Payment, a payment of £25 issued to eligible homes for periods when the temperature is below 0°C for

seven consecutive days, was a highly called upon resource at this time. For those vulnerable householders ineligible for the payment, however, the ability to acquire adequate heating services was severely compromised (NEA, 2018). It is estimated that in future events of extreme cold in the UK will become less likely as a result of climate change. However, December 2010 was the coldest December on record for over 100 years. The 2013 spring was also problematic due to the unseasonably late snowfall (Met Office, 2020).

The unprecedented lockdown circumstances during the coronavirus led to domestic energy consumption increases, consequently pushing up energy bills by an average of £16 per household (USWITCH, 2020). These conditions have caused some researchers to call for improved home energy efficiency standards rather than focusing the reduction of energy bills (University of Salford, 2020). The coronavirus pandemic has also served as a reminder that warm homes can reduce the impacts of respiratory illness, thereby increasing impetus to improve housing conditions (Baker et al, 2020).

Despite these more recent events bringing such health and financial vulnerabilities to the fore, active research on cold homes and their associated negative health impacts is well established in the UK. For example, the works of Liddell and Morris (2010) identified an increased risk of household accidents as a result of cold homes, as well as a higher occurrence of conditions such as arthritis, asthma, influenza and pneumonia. The Marmot Review (2011) highlighted variations in the health conditions affecting different age groups. These ranged from weight gain and developmental effects impacts in children and mental health impacts in adolescents. Adults experienced general health impacts, particularly in the elderly or those with pre-existing conditions.

Vadodaria et al., (2014) add depth to the previously discussed temperature increases in UK homes demonstrating that although bedroom temperatures have increased, there is little evidence of temperature increases in living rooms over the last 40 years (These findings call for increased study of domestic thermal comfort levels and for the focus of this work to differentiate between areas of the home (Vadodaria et al. 2014). Lomas et al. (2013) highlighted that in the city of Leister flats had a greater tendency to be warmer than other household types in the summer months, while detached homes and end terraces were more likely to be cooler. Importantly, people over 70 years old were much more likely to heat their homes during the summer months than other age groups, despite this group having an increased vulnerability to high summer temperatures. There are concerns that policy has focused disproportionately on the elderly, leading to the marginalization of other vulnerable groups (Snell et al, 2015). This has particular relevance to financial instruments, the Winter Fuel Payment has been labelled a

“blanket payment”, awarding funds according to age rather than need (Sovacool, 2015). The complex eligibility criteria associated with other financial aids have been labelled by others as too limiting (Walker and Day, 2012).

The fact that a number of energy poverty alleviation policies are now run by the private sector rather than the public sector has also been a source of criticism. The private sector is more likely to be cost conscious and less scrupulous in the selection and processing of vulnerable householders (Walker and Day, 2012), thus increasing the possibility that households in need are passed over. The fact that energy cost reduction measures are in some cases administered by energy companies is also called into question, identifying an apparent conflict of interest (Rosenow, 2013). In particular, the true cost saving impact of measures installed through the ECO scheme have been called into question, where it is argued that estimated savings are greater than achieved savings (Age UK, 2012; Moser, 2017).

The research community has also highlighted flaws in the Green Deal, going so far in some cases as to label the scheme a “failure” and arguing that despite its initial promise, the scheme severely under-delivered on the number of energy efficiency improvements made (O’Keeffe et al., 2016; Rosenow, 2016; Howarth et al., 2018). Reasons for the lower than expected uptake include uncertainty about the true financial benefits of efficiency measures (Howarth et al., 2018) and high interest rates on loan repayments (Rosenow, 2016). The complexity of the customer journey was another unattractive element of the scheme, where different efficiency measures offered under the scheme were installed by different organisations rather than a “one stop shop” approach (Bergman et al., 2017). Overall, in the eyes of the research community the severity of the UK cold homes problem still outweighs the policy response. The comparative maturity of the UK policy response to cold homes facilitates an assessment of the effectiveness of policy instruments over time. These assessments are employed by the research community to exert pressure in the policy making environment. Despite the fact that cold homes still present a significant problem in the UK, some policies have been positively received (Sovacool, 2015; Webber et al., 2015) and consumer expectations in terms of comfort and well-being have changed. There is also evidence of a certain level of Government transparency (for example with regard to EWD rates). It is therefore key that the research community continues to investigate the causes of cold homes and to publicly divulge their findings in order to realise meaningful reductions in the number of cold UK homes.

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