SOUTHAMPTON CITY COUNCIL

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HDRC Southampton

Fuel poverty and health risk in England Evidence Review

Contents

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1. Narrative Synthesis: Fuel Poverty and Health Risk in England

Fuel poverty remains a significant public health concern in England, disproportionately affecting vulnerable populations and contributing to a wide range of adverse health outcomes. This narrative synthesis draws on evidence from the literature to identify the individuals most at risk, examine the associated health impacts, and outline the key household and individual risk factors contributing to fuel poverty.

2. Who are the individuals and households most likely to be at risk of suffering adverse health because of fuel poverty?

A consistent body of literature identifies several groups as particularly vulnerable to the adverse effects of fuel poverty. These include:

- Low-income households, who often lack the financial resources to heat their homes adequately, particularly during colder months. More information is available from The health impacts of cold homes and fuel poverty Marmot Review Team, 2011.

- Older adults, especially those who spend more time indoors and are physiologically more susceptible to cold, are at heightened risk of cold-related illnesses such as hypothermia and cardiovascular complications. More information is available from Age UK Back to cutbacks (2025) and the Health and Thermal Comfort: From WHO guidance to housing strategies from the University of Warwick and Service des Etudes Médicales d'EDF, Levallois-Perret, France.

- Children and infants require warmer environments for optimal physical and cognitive development, and exposure to cold or damp conditions may impair their growth and educational attainment. More information is available from Fuel poverty and human health: A review of recent evidence from SienceDirect and The Dynamics of Bad Housing: The impact of bad housing on the living standards of children from the National Centre for Social Research.

- Individuals with disabilities or chronic illnesses also face greater sensitivity to indoor environmental stressors, often requiring higher ambient temperatures for comfort and health. More information is available from: Local action on health inequalities: Fuel poverty and cold home-related health problems from Public Health England, 2014.

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Additional at-risk populations include:

- Single-parent households, who often face both financial strain and limited housing choices. More information is available from: Getting the measure of fuel poverty from the Hill's Fuel Poverty review 2012.

Residents of poorly insulated or energy-inefficient homes, where structural deficiencies make it difficult to retain heat and manage energy costs effectively. More information is available from: A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary via ScienceDirect (Bouzarovski & Petrova, 2015) and Health effects of housing improvement: systematic review of intervention studies from the National Library of Medicine USA (Thomson et al., 2017).

3. What are the health impacts associated with those experiencing fuel poverty?

Fuel poverty is strongly associated with a wide array of negative physical and mental health outcomes. One of the most striking indicators is the persistently high rate of excess winter deaths, often attributed to prolonged exposure to cold indoor environments. More information is available from The health impacts of cold homes and fuel poverty Marmot Review Team, 2011 and Excess winter mortality in Europe: a cross country analysis identifying key risk factors from J D Healy in the BMJ 2003.

Cold, damp housing conditions are also a known risk factor for respiratory illnesses, such as asthma and bronchitis, particularly among children and older adults. More information is available from: Fuel poverty and human health: A review of recent evidence (Liddell & Morris, 2010) and Effects of improved home heating on asthma in community dwelling children: randomised controlled trial (Howden-Chapman et al., 2011).

Beyond physical health, the experience of living in fuel poverty contributes significantly to mental health challenges, including stress, anxiety, and depression—especially when households face persistent financial strain and live in substandard housing conditions. More information is available from: Chronic Residential Crowding and Children's Well-Being: An Ecological Perspective (Evans et al., 2008) from the journal of Child Development and The health impacts of cold homes and fuel poverty Marmot Review Team, 2011

Children growing up in fuel-poor households are at risk of impaired developmental outcomes, with negative implications for both physical health and long-term educational and social outcomes. More information is available from: Health co-benefits from housing-related policies (Howden-Chapman et al. 2012) from New Zealand.

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Existing chronic conditions, such as arthritis and cardiovascular disease, can be exacerbated by cold temperatures, adding to the burden of disease among already-vulnerable populations. More information is available from: The effects of improved home heating on asthma in community dwelling children: randomised controlled trial (Howden-Chapman et al., 2008) from the National Library of Medicine USA.

In the Marmot Review (from page 16) some of the indirect health impacts also identified were:

- Psychological and developmental impacts on children: Cold and substandard housing conditions can profoundly affect children's mental health and developmental outcomes
- Mental Health and quality of life: Thermal discomfort and the financial pressures of heating poorly insulated homes contribute to stress and diminished emotional wellbeing
- Nutritional deprivation and "Heat or Eat" Trade-offs: Fuel poverty often forces households to choose between heating their homes and purchasing adequate food. The “heat or eat” dilemma disproportionately affects low-income families, leading to reduced spending on food during colder months.
- Increased risk of injury and physical deterioration: Cold indoor temperatures worsen conditions such as arthritis, leading to reduced dexterity and increased risk of falls, especially in older adults.
- Social isolation and reduced independence: Cold homes contribute to social withdrawal, particularly among older individuals.

4. What are the risk factors (at individual or household level) associated with fuel poverty?

At the root of fuel poverty are several interrelated socioeconomic and structural risk factors:

Low household income is perhaps the most consistent predictor of fuel poverty, limiting the ability to afford adequate energy for heating. More information is available from: Getting the measure of fuel poverty from the Hill’s Fuel Poverty review 2012.

This financial constraint is compounded by high energy costs, which vary by region and are influenced by market conditions, infrastructure, and policy decisions. More information is available from: A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary via ScienceDirect (Bouzarovski & Petrova, 2015)

Structural deficiencies in housing, such as poor energy efficiency, inadequate insulation, or the absence of modern heating systems, significantly increase fuel consumption and costs. More information is available from: Health effects of housing improvement: systematic review of intervention studies from the National Library of Medicine USA (Thomson et al., 2017).

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Household composition also plays a role; for example, elderly individuals living alone or families with young children may face unique energy needs and challenges. More information is available from: Getting the measure of fuel poverty from the Hill's Fuel Poverty review 2012.

Tenure type is another critical factor. Those in private rental housing often lack control over improvements to insulation or heating, and landlords may be reluctant to invest in upgrades. More information is available from: A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary via ScienceDirect (Bouzarovski & Petrova, 2015)

Rural households are also at higher risk, as many live in older, less energy-efficient homes and may not be connected to mains gas, increasing their reliance on more expensive or less efficient heating options. More information is available from Fuel poverty and human health: A review of recent evidence (Liddell & Morris, 2010).

5. Conclusion

The evidence clearly demonstrates that fuel poverty is both a social justice and public health issue, with profound implications for vulnerable populations. Addressing fuel poverty requires not only targeted financial assistance and energy subsidies but also long-term investment in housing quality, energy efficiency, and health-informed housing policy. Multi-sectoral collaboration, spanning health, housing, and social care, is critical to mitigating the health burdens associated with cold homes and ensuring equitable access to safe, warm living environments.

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