

ESRI  
RESEARCH  
BULLETIN  
DECEMBER  
2020

# HOUSEHOLD ENERGY POVERTY AND CHILDREN'S HEALTH

GRETTA MOHAN



# Household energy poverty and children's health<sup>1</sup>

---

Gretta Mohan\*

*ESRI Research Bulletins provide short summaries of work published by ESRI researchers and overviews of thematic areas covered by ESRI programmes of research. Bulletins are designed to be easily accessible to a wide readership.*

**A minor correction has been made to the results section following initial publication. The text now reads 'By wave three (2016), 7% of those surveyed reported experiencing energy poverty.' A previous version had read 'By wave three (2016), 6.4% of those surveyed reported experiencing energy poverty.'**

## INTRODUCTION

The inability to maintain a warm, thermally comfortable home is known as energy poverty (also called fuel poverty or energy insecurity). Low incomes, high energy costs and energy inefficient dwellings are principal causes of household energy poverty. Children growing up in energy poor households may be especially vulnerable to negative health effects arising from living in cold environments, particularly pre-school children who spend most of their time indoors. This research investigates the link between household energy poverty and children's health in Ireland. The insights may be timely because COVID-19 restrictions, including remote working and schooling arrangements, have resulted in more people spending greater amounts of time in their homes.

## DATA AND METHODS

The research used data from two cohorts of the *Growing Up in Ireland* study. The first wave of the Child Cohort surveyed over 8,500 families of 9-year olds in 2007/8, following them up again when they were 13 years old, and at 17/18 years. Another Infant Cohort of younger children, first interviewed over 11,100 families of 9-month olds in 2008/9, followed up at 3 years and 5 years. A measure of energy poverty could be constructed from the survey responses, based on households that reported not being able to afford to keep the home adequately warm and/or going without heating in the previous 12 months because of a lack of money.

The main research question was whether this measure of energy poverty was related to the likelihood of a child having a respiratory illness (e.g. asthma), wheezing and whether the child was rated as 'very healthy'. The analysis accounted for other factors that could influence these relationships, e.g. child gender, the socio-economic status of the family, the presence of smoking in the household, etc.

---

<sup>1</sup> This Bulletin summarizes the findings from: Mohan, G., "Young, poor, and sick: The public health threat of energy poverty for children in Ireland", Energy Research and Social Science. Available online: <https://doi.org/10.1016/j.erss.2020.101822>

## RESULTS

There was an increase in energy poverty over time for the two study cohorts. Five per cent of households were energy poor in first wave of the (older) Child Cohort, 2007/8. By wave three (2016), 7% of those surveyed reported experiencing energy poverty.

In the first wave of the (younger) Infant Cohort, 8.3% of households surveyed were energy poor in 2008/9. By the third wave of the survey in 2013, 12.7% experienced energy poverty.

Among this younger cohort, household energy poverty was associated with a higher likelihood of respiratory illness and wheezing, as well as a lower likelihood of the young child being rated as 'very healthy'. However, while the same relationships between energy poverty, respiratory illness and overall health were evident also among the cohort of older children, the associations were not as strong.

## CONCLUSIONS

The harmful effect on the respiratory and overall health of children residing in energy-poor homes highlights the need for greater policy attention, particularly for younger children. Energy poverty is caused by multiple factors, necessitating a blend of policy responses. Deep retrofitting and the replacement of inefficient heaters and devices have demonstrated improvements to home warmth and children's health in New Zealand<sup>2</sup> and Wales<sup>3</sup>. Such interventions also reduce energy consumption and carbon emissions. Strict energy efficiency regulations for new homes are important. Short term initiatives such as energy related financial supports and income support also play a role.

Entitlement to government assistance may be means tested or based on health conditions or other vulnerabilities. Particular household structures such as single parent families, may be targeted for assistance. Health practitioners such as family doctors can assist by identifying and referring children vulnerable to cold homes and the associated health impacts. The *Warmth and Wellbeing* pilot scheme operating in some areas in Dublin is a scheme which offers free, extensive energy efficiency upgrades to applicants referred for intervention by a Health Service Executive official. Potentially eligible households include those containing a child under 12 years with a respiratory condition and with a guardian in receipt of fuel allowance or a single parent benefit.

---

<sup>2</sup> Howden-Chapman P, Pierse N, Nicholls S, Gillespie-Bennett J, Viggers H, Cunningham M, et al. Effects of improved home heating on asthma in community dwelling children: Randomised controlled trial. *Br Med J*. 2008; 337 (7674): 852–5.  
Free S, Howden-Chapman P, Pierse N, Viggers H. More effective home heating reduces school absences for children with asthma. *J Epidemiol Community Health*. 2010; 64(5): 379–86.

<sup>3</sup> Edwards RT, Neal RD, Linck P, Bruce N, Mullock L, Nelhans N. Enhancing ventilation in homes of children with asthma: *Br J Gen Pract*. 2011; (November): 733–41.

Whitaker Square,  
Sir John Rogerson's Quay,  
Dublin 2  
Telephone **+353 1 863 2000**  
Email **admin@esri.ie**  
Web **www.esri.ie**  
Twitter **@ESRIDublin**