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Fuel poverty as a major determinant of perceived health: the case of France

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ABSTRACT

Objectives: The number of households in fuel poverty is growing. Individuals increasingly struggle to heat their homes, and therefore, a growing number of individuals are exposed to low temperatures, which can affect their health. This study sought to determine the link between a subjective measure of fuel poverty (self-reported feeling cold) and self-reported health. The impact of other particular individual and environmental features on self-reported health were also analysed.

Study design: Econometric analysis.

Methods: The study method uses self-reported perception of thermal discomfort (self-reported feeling cold) as a proxy for fuel poverty. The French database of the Healthcare and Insurance survey carried by the Institute for Research and Information on Health Economics (IRDES) was used to estimate a dichotomous probit model.

Results: The estimation allows us to infer a negative impact of fuel poverty on self-reported health. Thus, a person in fuel poverty is 2.36 percentage points more likely to report poor or fair health status than a person who is not in fuel poverty.

Conclusion: It may be appropriate to reduce the impacts of fuel poverty to provide support for the most vulnerable categories of individuals with respect to the health impacts of fuel poverty and cold homes, e.g., chronic patients who experience difficulty heating their homes.

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Introduction

According to the French National Institute of Statistics and Economic Studies (INSEE), in France in 2013, 8.6 million persons were living in poverty, using a threshold of 60% of the median standard of living. In June 2013, the number of

unemployed in category A (jobless jobseekers obliged to actively seek a job) was 3.28 million (more than 10% of the labour force). Increasing numbers of French residents face financial exclusion or are in serious debt; thus, the authors are witnessing an increase in the number of those experiencing real precariousness, to employ the French term. As a result, households increasingly struggle to heat their homes. The

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number of households in fuel poverty is expected to grow, especially considering to the projections of the French Commission for Energy Regulation (CRE). In 2017, the regulated residential (respectively professional) tariff will increase by 30.1% (respectively 25.8%) including the Contribution to Electricity Public Services (CSPE).¹ However, what do we mean by fuel poverty?

Prior to August 2013, the UK government considered a household to be experiencing fuel poverty if more than 10% of its income was spent on heating.² This 10% figure is twice the median expenditure on energy consumption calculated from the 1988 Family Expenditure Survey (FES), a survey that provides, among other things, information on UK households such as income and the regularity of payments. This objective measure (named the rate of energy effort) is used by INSEE. Thus, in France, households that spend more than 10% of their income on energy bills are considered to be experiencing fuel poverty. Using this measure and INSEE data in 2006, 3.8 million households appear to be experiencing fuel poverty. However, the use of this measure is questionable. On the one hand, it is likely that the median level of energy consumption has changed since 1988 and that the French level differs from that in the UK. On the other hand, the methodology used to calculate this level and the robustness of the results could be criticized. For example, a change in the temperature threshold used to calculate heating costs can generate substantial variations in the number of households considered to be in fuel poverty.³ In response to criticisms of this indicator, in August 2013, the British government adopted the definition proposed by the Hills Review.⁴ According to this definition, a household is fuel poor if: 1) its income is below an income threshold equal to the relative poverty line, set at 60% of the national median income, after deducting housing costs (rent, repayment of a mortgage, etc.) and energy costs (electricity bills, etc.); and 2) its normative modulated energy expenditure is higher than a threshold of energy expenditure equal to median household energy expenditure.

To reflect the diversity of individual situations and only capture include households that are poor, it is possible to assume that among households for which the 'remaining resources' after deducting unavoidable expenditures are below 200 euro per month are in fuel poverty.⁵ However, placing the threshold value at 200 euro does not appear justified. The definition of fuel poverty and the choice of threshold have important policy implications.⁶

In France, the definition in Article 11 of the French commitment to the environment (Grenelle II law) of 12 July 2010 is as follows: a person in fuel poverty under this Act [is defined as] a person who has difficulties disposing of the necessary energy to satisfy his basic needs due to the inadequacy of his resources or his living conditions. This definition reflects the three main factors of fuel poverty,³ i.e., households that are vulnerable because of their low incomes,^{7–9} poor heating and insulation standards¹⁰ and/or high energy prices.¹¹ Under the assumption that fuel poverty is related to other forms of poverty, it is essential to adopt a multidimensional approach.¹² Thus, Dubois¹² proposes a definition of fuel poverty based on the following three criteria: 1) a lack of access to a certain level of utility, among others, the inability to maintain a desired household temperature, or worse, an inability to retain their housing; 2) the absence of

certain social primary goods¹³; and 3) the concept of capabilities. This concept allows us to understand why habits are distributed in different ways across individuals and can be summarized as opportunities to do certain things that allow one to be in certain states. A capability is the combination of functionings that an individual is capable of achieving. Functionings represent parts of the state of a person – in particular the various things that he or she manages to do or be in leading a life. The capability of a person reflects the alternative combinations of functionings the person can achieve, and from which he or she can choose one collection. The approach is based on a view of living as a combination of various 'doings and beings', with quality of life to be assessed in terms of the capability to achieve valuable functionings.¹⁴

Persons experiencing fuel poverty cannot heat their homes to temperatures established as acceptable by the World Health Organisation (WHO): the main living area must have a temperature of 21 °C, and the other occupied rooms must have temperatures of 18 °C. Thus, the primary threat from fuel poverty is the exposure of the body to low temperatures. To determine the number of households experiencing fuel poverty, one can use a subjective measure such as the coldness felt by an individual. Thus, the response to the question in the French National Housing Survey (database of INSEE): 'did you feel cold during the winter?' can approximate the number of French residents experiencing fuel poverty. The proportion of individuals responding positively to this question in 2006 was 14.8%, compared to 10.9% in 1996. The INSEE is not the only entity to use this indicator (see ONE¹⁵ and Healy and Clinch,¹⁶ for example). One of the criticisms of this indicator is that it is subjective, but the data considered by monetary indicators (such as the rate of energy effort) are declaration data and therefore equally questionable.

Assessing fuel poverty as a component of overall precariousness and in connection with other forms of poverty appears essential to design effective solutions. By precariousness, the authors mean a state that offers no guaranteed period of stability and can always be questioned (for example precarious health, a precarious job). As a result, precariousness can be addressed through different types of spending (health, food, energy, etc.).

One objective of this paper is to understand the interactions between health and fuel poverty. Much British work is devoted to analysing the links between the various forms of precariousness. Thus, on the one hand, studies have highlighted the negative impact of living in cold, poorly heated homes on the physical and mental health of individuals.^{17,18} Other studies have demonstrated that poor thermal efficiency, often considered a characteristic of poor housing, increases the risk of falling into fuel poverty.¹⁹ In addition, a lack of thermal efficiency promotes mildew and moisture, which have adverse effects on individual health.²⁰

The relationship between the energy efficiency of each household and the health (diseases or symptoms thereof) of its occupants has been estimated using data from the epidemiological study LARES (Large Analysis and Review of European housing and health Status) and a logistic regression model.²¹ The results of this analysis confirm, among other things, the relationship between poor thermal comfort and an increased risk of respiratory and cardiovascular diseases.

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