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Identifying populations and areas at greatest risk of household food insecurity in England

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ABSTRACT

Despite the increasing recognition of household food insecurity as a policy issue, there is currently no routine measurement of food insecurity in the UK. There is nothing to suggest that Government will address this in the near future for all parts of the UK. In which case, policy makers and campaigners might instead seek out consistent and robust measures of the population-level factors which are known to contribute to food insecurity. However, no systematic measures exist, meaning that resources may not be targeted at those areas most in need. This paper presents the first objective estimate of high population-level risk of household food insecurity in English neighbourhoods (4.09% of the population, 95%CI 4.08–4.10) using public data. Estimated geographic distribution of factors contributing to household food insecurity is customisable to local pressures and is adaptable to settings outside of England.

1. Introduction

Those experiencing food insecurity contend with the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, and/or the uncertainty that they will be able to do so (Riches and Riches, 1997). Within the UK the very real problem of people not being able to access sufficient food has become increasingly apparent (Alkon et al., 2013). A history of welfare diversification over the last 20 years, combined with ongoing restructuring, severe public spending cuts and recession have meant a rise in both food insecurity and charitable sector responses to it (Ashton, Middleton, & Lang, 2014; Lambie-Mumford, 2013; Taylor-Robinson et al., 2013).

Private sector management styles have developed in welfare alongside welfare-to-work and labour-centred benefit reforms. The outcomes have been increasing concerns over widening social inequality and inequity, and the expansion of the third sector to deal with the shortcomings in provision and coverage that these changes entail (Heins & Bennett, 2016). One key example is benefits sanctions, the stoppage of welfare payments to recipients. This has been identified as an immediate and severe pathway into poverty, and therefore also into food insecurity. There has been a spectacular growth of these harsh penalties for non-compliance in recent years, especially in relation to the ongoing welfare-to-work focus of post 2010-policy. At their peak, benefit sanctions in the UK exceeded the number of fines imposed by the criminal courts. The severity and potential injustice of this has become an area of debate for causing disproportionate hardship (Adler, 2016).

However, the growing policy problem of food insecurity in the UK is currently ill-informed due to a lack of systematically collected data on who is experiencing food insecurity, where and for how long. All nations in the UK do not routinely measure food insecurity among their populations, nor is there an established and robust measure of the population-level factors which contribute to food insecurity which might be utilised in place. This seems unlikely to change soon because of the challenges in harmonising data collection across the UK, though there are increasing calls for such data collection (Food Research Collaboration, 2016).

This paper considers how to best estimate the household conditions which contribute to food insecurity in England at a time when no widespread information on this situation is collected regularly, and offers a new tool that may be adapted by local councils or charitable groups seeking to identify areas where such conditions may be occurring more frequently. As one option, this method of estimation is described to assist in establishing a national measure of risk of household food insecurity.

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1.1. The challenge of measuring food insecurity in the UK

While there are no routinely collected data on food security, one indication of the increasing incidence of food insecurity in the UK is the proliferation of food banks since 2010, highlighted in the All-party parliamentary group (APPG) on hunger and food poverty's final report (All Party Parliamentary Group on Hunger & Food Poverty, 2014). The prevalence and location of food banks – Trussell Trust food banks (the largest network of food banks in the UK, organised as a franchise) – could be used as a proxy measure for levels and distribution of food poverty or insecurity. One recent study showed that Trussell Trust food banks are more likely to open in local authorities characterised by cuts to central welfare, higher rates of unemployment and higher rates of benefit sanctions (Loopstra et al., 2015). However, to rely on food bank location data to identify areas of food poverty or insecurity is extremely problematic (and indeed, not the intention of the aforementioned study). The third sector/franchise nature of food bank set-ups means that the opening and location of food banks is based on community resources and local social networks – not an objective measure of need or population characteristics. In the UK, barriers to accessing food banks may include stigma associated with receiving food aid (Lambie-Mumford et al., 2014), awareness of local food banks and the presence of a 'gatekeeper' who may provide the required voucher such as a GP. In fact, research in Canada suggests that only around 20% of people who are food insecure use food banks (Loopstra & Tarasuk, 2015). Given the increasing importance of food insecurity as a public health issue, this approximation/lack of measurement cannot continue.

1.2. Calls for measurement solutions

A 2016 report by the Food Research Collaboration (FRC) in the UK (Taylor-Robinson et al., 2013) echoed the call for a formal measure of food insecurity in the UK, based on survey questions from Canada or the EU (European Union's Survey on Income and Living Conditions [EU-SILC]) (Arora et al., 2015). The selected EU-SILC questions used in Wales and Northern Ireland reflect different aspects of food insecurity, asking about specific components of diet and meal skipping in recent weeks; this does not address changes in diet due to insufficient funds and only includes the immediate past (Food Research Collaboration, 2016).

There are validated measures of material and social deprivation for the UK that may identify areas where food insecurity is more likely to occur. The most common indicator of local deprivation in England, the Index of Multiple Deprivation (IMD), is a comprehensive measure of social and material deprivation. Some of the domains which inform local scores could be useful in identifying areas where households are likely to be at a higher risk of food insecurity, such as unemployment and benefits claimants, however, the data used in each IMD is based on older data; for example the 2015 IMD is informed by data from 2012 to 2013 (Department for Communities and Local Government, 2015). It would be beneficial to include the most recent data on benefits as they are available each quarter (Department for Work and Pensions, 2016a). Additionally, the IMD uses the entire population when devising a deprivation score, and we see different risk factors depending on age, household composition from the qualitative work (Kneafsey et al., 2012) which allow for more precise measurement.

There is scope to devise a risk indicator specific to household food insecurity, as requested by the government (All Party Parliamentary Group on Hunger & Food Poverty, 2014) and the recent FRC report (Food Research Collaboration, 2016). Although the IMD or other deprivation measures (such as Carstairs (Carstairs, 1995)) may be used to predict food insecurity based on population profiles, there is a precedent to develop bespoke indicators for specific health concerns. One example is the MEDclass and MediX environmental classification system to provide a score for the local physical environment as it may impact on the health of local populations (Richardson et al., 2009, 2010). These environmental classifications offer greater specificity to health risks/benefits posed by the physical environment that overlaps with and compliments the Living Environment domain of the IMD score (Department for Communities and Local Government, 2015).

Measurement of food insecurity risk by locality in the UK is now a priority, as indicated by the convening of the all-party parliamentary inquiry into food poverty and hunger which addresses this lack of information in its first term of reference: "to understand the extent and geographical spread of hunger and food poverty in this country" (All Party Parliamentary Group on Hunger & Food Poverty, 2014). In the absence of a full or partial population measure a tool has been devised here to estimate household food insecurity in local areas (Middle Super Output Areas [MSOA]) across England. This tool may be adapted for use in other countries of the UK and in similar settings, such as Australia, where household food insecurity survey data are unavailable.

2. Materials and methods

This model is created to estimate risk of household food insecurity in two broad population groups, working age including children and pensionable age. Two influential factors in identifying risk include demographic traits of the households and whether benefits are claimed. The model provides options to combine data on these factors (described here as 'domains') to allow end users to customise the outputs to best suit their focus; this was developed with input from potential users and stakeholders at a seminar in xxx xxx (blinded for peer review) which refined the methods and choice of presentation (Thompson, Smith, & Shelton, 2015). Please see the data Appendix for detail regarding geographic scale and benefits categories for both UK and international readers.

This method is developed based on profiles identified by qualitative research rather than an income-based cut-off (e.g., households falling below a certain level of income are at risk of food insecurity (Niamh, Karim, & Richard, 2016)). Drawing on research conducted in England to inform our method is the most reliable option in the absence of a clear working hypothesis in a relatively new area of study, and it allows for the acknowledgement that in some areas of the country or personal situations income will stretch further, influenced by other living costs. We further discussed this measure with other researchers on the topic and local community groups to refine our process at a seminar in July 2015 (Thompson et al., 2015). Thus, our measure is focused on economic characteristics, as identified in the qualitative studies, however, we avoid a definitive numeric income level to characterise households at highest risk.

Choice and development of domains is informed by recent qualitative studies into food insecurity in England. The first domain identifies types (demographic profiles) of households at greatest risk of food insecurity from the 2011 Census: pensioners living alone, low-income households with dependent children, low-income lone parent households (Kneafsey et al., 2012). At a time when there is still little detailed information, certainly no systematic data apart from that collected by food banks about the causes or influences of food insecurity in England, the best option was to explore the literature on food insecurity that is growing in the UK. A team of researchers conducted a study based around Trussell Trust food banks, funded by the Department for Environment, Food and Rural Affairs (DEFRA) and identified the above types of households as being at highest risk of experiencing food insecurity (Kneafsey et al., 2012). While this area of research is developing, this was the optimal starting point to create a more detailed profile of populations at risk.

The second domain provides a range of data on benefits claimants by MSOA for a sample of recent data (Sept–Nov 2015) on the counts of people claiming benefits, here we specified Job Seekers Allowance (JSA) or Employment and Support Allowance (ESA) in Lower Super Output Areas (LSOA) (Department for Work and Pensions, 2016a) and the counts of people who claim JSA or ESA and were sanctioned (had