Proceedings of the Nutrition Society, Page 1 of 6 doi:10.1017/S002966512300366X
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The Nutrition Society Scottish Section Conference 2023 was held at Glasgow's iconic Royal College of Physicians and Surgeons on 28–29 March 2023

Conference on 'Diet and health inequalities'
Symposium one: Food insecurity and human health

Addressing food insecurity: what is the role of healthcare?

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Food insecurity – when individuals or households have difficulty accessing sufficient, safe, culturally appropriate and nutritious food due to lack of money or other resources – is a global public health concern. Levels of food insecurity have increased across the UK in recent years, due in part to a decade of austerity, widespread loss of income during the COVID-19 pandemic and the more recent cost-of-living crisis, leading to rising use of food banks. The stress of living with uncertain access to food and going periods without food is damaging to physical and mental health. Food insecurity is linked to both obesity and malnutrition, as often the most readily available foods are processed, high in fats, sugars and salt, but low in essential nutrients for health. While recognising that many of the drivers of food insecurity, and health inequalities more broadly (i.e. the social determinants of health) lie outside the health service, it is increasingly acknowledged that the National Health Service – and primary care in particular – has a key role to play in mitigating health inequalities. This review considers the potential role of healthcare in mitigating food insecurity, with a focus on primary care settings. Recent initiatives in Scotland, such as community links workers and general practitioner practice-attached financial advice workers, have shown promise as part of a more community-oriented approach to primary care, which can mitigate the effects of food insecurity. However, a more 'upstream' response is required, including 'cash first' interventions as part of broader national strategies to end the need for food banks.

Keywords: Primary health care: Food insecurity: Nutrition

Food insecurity is a global public health concern. Defined as the 'individual or household inability to acquire or consume adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so'[1], it has become increasingly common in the UK in recent years. The 2017 International Food Policy Study suggested around a quarter of UK adults live in food-insecure households[2]. Since then, food insecurity has risen further due to austerity, widespread loss of income during the COVID-19 pandemic and the more recent economic stress of the cost-of-living crisis[3,4]. Demand for emergency food aid increased in the months of December 2022 and January 2023, compared to the same period in 2021/2022, as reported by a survey of the Independent Food Aid Network[3]. Of course, the use of emergency food aid (such as food banks) is an unreliable indicator of the true extent of food insecurity, as it represents the more severe end of the spectrum[5].

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Proceedings of the Nutrition Society

https://doi.org/10.1017/S002966512300366X Published online by Cambridge University Press

Food insecurity is strongly socially patterned, with higher rates of food insecurity among those living in the most socioeconomically disadvantaged circumstances. While recognising that many of the drivers of food insecurity – and health inequalities more broadly (i.e. the social determinants of health)[6] – lie outside the health service, it is increasingly acknowledged that the National Health Service (NHS), and primary care in particular, has a key role to play in mitigating health inequalities[7]. This article will provide an overview of food insecurity in the UK and outline the potential role of healthcare in addressing food insecurity.

Measures of food insecurity

There are many approaches to measuring food insecurity, but the 'gold-standard' is widely considered to be the United States Department of Agriculture's adult food security survey module, which is based on the well-grounded construct of the experience of food insecurity being composed of three domains: uncertainty/anxiety about food access, changes in food quality and changes in food quantity[8]. The survey module has been shown to have good internal and external validity in a range of contexts[9,10]. It also forms the basis of the food insecurity experience scale (see Box 1), which is used internationally and promoted by the FAO of the UN for international comparisons[8].

The food insecurity experience scale can be used to categorise food insecurity on a scale of severity, from mild (characterised by worry about the ability to obtain food) to severe (experiencing hunger)[8]. Some surveys (such as the Scottish Health Survey) have simplified their assessment of food insecurity by taking one question from each of these three categories. Since 2016, the UK Food Standards Agency began to include the United States Department of Agriculture's adult food security survey module as part of the Food and You survey[11]. Then in 2019, the United States Department of Agriculture's module was adopted by the Department for Work and Pensions in the Family Resources Survey[12], used to report on the prevalence of food insecurity for each UK nation and each region in England. It is important to note, however, that the UK Food Standards Agency measures food insecurity over the past 12 months, whereas the Department for Work and Pensions measures food insecurity over the past 30 days.

Who is most at risk of experiencing food insecurity?

There are many drivers of food insecurity at local, regional, national and international levels, including food production and availability, shaped by climate conditions and food markets[13]. In the UK context – and many other high-income countries – it is individuals and families from the most socio-economically disadvantaged areas that are most likely to experience food insecurity[14]. Food insecurity often exists alongside other social stressors related to low incomes, including housing instability, unemployment, receipt of benefits and overall socioeconomic status[15,16].

A nationally representative UK study published in 2022 found that 14·2 % of respondents experienced food insecurity and those most at risk were younger people, people on low incomes and home renters[17]. This is consistent with other research, which has also highlighted younger people and those living in rented accommodation as being at increased risk[18,19]. In addition, research from Scotland has found that refugees and asylum seekers, and families with children are also more vulnerable to food insecurity[20,21]. Indeed, the Scottish Health Survey reported that food insecurity was highest amongst single parent households, with 34 % being concerned about running out of food (mild food insecurity), 23 % eating less (moderate food insecurity) and 12 % running out of food (severe food insecurity)[3,17].

As we recover from the COVID-19 pandemic, 13·4 million people in the UK (including 3·9 million children) continue to live with insufficient funds to pay for basic living costs including clothing, shelter and food[22].

Box 1. Food insecurity experience scale

During the last 12 months, was there a time when, because of lack of money or other resources:

1. You were worried you would not have enough food to eat?
2. You were unable to eat healthy and nutritious food?
3. You ate only a few kinds of foods?
4. You had to skip a meal?
5. You ate less than you thought you should?
6. Your household ran out of food?
7. You were hungry but did not eat?
8. You went without eating for a whole day?

Items 1–3: **MILD**; items 4–6: **MODERATE**; items 7–8: **SEVERE**

https://doi.org/10.1017/S002966512300366X Published online by Cambridge University Press

Instead, post-pandemic events have witnessed living costs rise alongside inflation, which hit 11·1 % by October 2022 with no signs of dropping in 2023 to the Bank of England's recommended 1–3 %[23]. Food inflation has also been affected by the war in Ukraine, Brexit and other supply chain issues. This has the greatest implications for the poorest 20 % of households, who spend a larger proportion of their income on food, further widening inequalities related to food insecurity[24].

Health impacts of food insecurity

The stress of living with uncertain access to food and going periods without food is damaging to both mental and physical health[25]. Adults experiencing food insecurity are more likely to suffer from anxiety and depression[25]; the stigma related to food insecurity can mean that those affected do not seek immediate help and instead adopt coping mechanisms including reducing number of meals, portion sizes and food variety[26], as well as other unhealthy coping strategies such as smoking[27] and alcohol consumption[28].

In terms of physical health, food insecurity is linked to both overnutrition (overweight and obesity) and undernutrition – often referred to as the double burden of malnutrition[29,30]. The exact mechanisms explaining the association between food insecurity and obesity are unclear, but changes to eating patterns are likely to contribute[31,32]. For those living on a low income, the cheapest and most readily available foods are often highly processed, high in fats, sugars and salt, but low in essential nutrients for health[33]. An independent enquiry on food and poverty in the UK published in 2015 found that people experiencing food insecurity actively sought cheaper energy-dense food over more expensive nutrients to maximise their food budget[34].

Lower income families on average consume less fruit and vegetables than higher income households[33], a situation exacerbated by neighbourhood factors, with more deprived areas having a higher density of fast-food outlets and other unhealthy products, such as tobacco, alcohol and betting shops[35]. The combined effect of these factors is an increased risk for a range of chronic diseases, including diabetes, hypertension, CVD and several cancers, which are linked to poor nutrition and reduced life expectancy[36,37]. It is perhaps unsurprising, therefore, that people living with health conditions are the highest users of food banks in the UK[38].

The role of healthcare in addressing food insecurity

It is clear that food insecurity has significant impacts on health, physical and mental, but it is less clear how healthcare services should respond to food insecurity. This section will briefly review evidence for the persistence of the inverse care law, a fundamental constraint on the potential of community-based health services to respond to food insecurity (and, indeed, any other health and social problems that are concentrated in areas of socio-economic disadvantage), then consider promising developments in Scottish primary care, before summarising international examples of screening for food insecurity in healthcare settings.

The inverse care law

The inverse care law, coined by Dr Julian Tudor Hart in 1971, states that the 'the availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources'.[39] Globally, the role of market forces in health care remains a significant contributor to health inequalities – private health care can only be accessed by those who have the means to pay for it[40].

In UK general practice, however, where there are no user fees for accessing health care, the inverse care law is about the difference between what practices *can* do *v.* what they *could* do, if adequately resourced. Research has shown that areas of high deprivation tend to have higher healthcare needs, yet on average have fewer general practitioners with higher workloads, higher stress and more patients[41]. Furthermore, practices located in the most deprived regions receive approximately 7 % less funding per need-adjusted registered patient[42]. The inverse care law in general practice manifests as insufficient time to adequately respond to the complexity of health and social problems in deprived areas.

The Scottish deep end project

In response to the inverse care law, the Scottish deep end project was established in 2009 as a collaboration between academics and general practitioners working in the most socio-economically disadvantaged communities in Scotland[43]. This has resulted in a growing sense of identity, solidarity and common purpose – to improve the volume, quality and consistency of primary care where it is needed most. Over the last five to ten years in Scotland, initiatives which began as pilot projects in a handful of deep end practices, such as community links workers and general practitioner practice-attached financial advice workers, have been rolled out nationally[44,45]. This more community-oriented approach to primary care, which has been advocated internationally for decades[46,47], exemplifies the potential role of healthcare in mitigating health inequalities and supporting those experiencing food insecurity.

Community links workers connect patients to resources in their communities that can help with their health and wellbeing. They support people to access these resources, building confidence and trust over time. This can be invaluable for individuals experiencing issues related to poverty (including food insecurity) or other social and economic stressors[48]. Similarly, for those experiencing financial difficulties, debt or issues with benefits (benefits sanctions are a common

Proceedings of the Nutrition Society

https://doi.org/10.1017/S002966512300366X Published online by Cambridge University Press

contributor to food insecurity), then practice-attached financial advice workers can also make a big difference, through income maximisation[49]. These additional members of primary care teams are no 'silver bullet' for mitigating health inequalities in areas of high deprivation[50], but they do make a difference and should continue to be resourced and evaluated as part of broader efforts to integrate health and social care with other community resources[51].

Screening for food insecurity in healthcare settings

Despite widespread use of food insecurity questions in research and national surveys, their use in routine clinical practice settings has been limited, with frequently cited barriers being that they are time consuming and complex to use[15,52]. As a result, various shortened versions have been developed for use in clinical environments, which have been found to be sensitive and specific when assessing food insecurity among low-income households[15,52,53].

In the UK, community links and financial advice workers do not routinely 'screen' for food insecurity, though it is frequently addressed in consultations. Most research has been done in North America, where screening for food insecurity has been found to be acceptable to patients and clinicians in a range of clinical settings[15]. Indeed, a systematic review of interventions addressing food insecurity in primary care settings analysed several interventions in US and Canadian health care settings but did not find any studies from the UK[37].

International examples of linking screening for food insecurity with interventions to address it include the US EveryONE project, recommended by the American Academy of Family Physicians, which integrates food insecurity screening with an online resource platform that can be used to help patients find relevant services, including food pantries[54].

A similar US project targeted families with infants aged 12 months or younger and provided them with supplemental formulas, educational resources and referrals to social work, medical–legal partnerships, and food pantries where necessary[55]. As a result, this intervention was also able to produce a small yet significant effect upon health indicators and developmental screening scores. These examples demonstrate the potential for healthcare providers to identify and respond to food insecurity, but current evidence remains limited[15,53]. Further research and evaluation of food insecurity interventions in healthcare settings is required.

Conclusions

Food insecurity is a significant public health concern in the UK and internationally, which has been made worse by austerity, the COVID-19 pandemic, and cost-of-living crisis. Food insecurity affects mental and physical health and should be monitored at local and national levels.

The Scottish government has committed to a human rights approach to food, aiming to improve access to nutrition-rich and cost-effective meals, with increased financial support to lower income families, free school meals for children and the introduction of the real living wage[56]. Attempts to reduce food bank reliance are also in order through the introduction of 'cash first' methods, helping to maintain the dignity of those requiring emergency food through more respectful initiatives[57]. Examples of 'cash first' interventions include:

Local authority crisis payments in cash; ensuring advice and support is available and promoted to prevent people from reaching crisis point; UK government policies such as the universal credit £20 uplift; national policies/strategies such as the Scottish government plan to end the need for food banks[56].

There is growing international interest in the role of healthcare in addressing food insecurity. In the UK, expanded primary care teams include elements of social prescribing, such as the community links worker initiative in Scotland. These roles can support people who are at risk of food insecurity and – if targeted to where needs are greatest – may mitigate health inequalities in socioeconomically disadvantaged areas, though the evidence for routine screening of food insecurity in healthcare settings remains limited.

Financial Support

None.

Conflicts of Interest

None.

Authorship

N. R. wrote the first draft and was involved in editing. D. N. B. conceived the article idea, edited drafts and provided supervision. Both authors approved the final version of the manuscript.

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