Public health for paediatricians: 15-minute guide to identify and address food insecurity

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ABSTRACT

Food insecurity is a major problem in the UK. It has been both highlighted and exacerbated by the COVID-19 pandemic, and particularly affects children and young people (CYP). The effects of inadequate nutrition manifest themselves in all stages of child development and adversely affect health and educational outcomes. Healthcare professionals working with CYP can address food insecurity at individual, local community, organisational and national levels. The government plays an important role in monitoring and responding to food insecurity, supporting CYP most in need.

This paper summarises how food insecurity can be identified and approached by healthcare professionals in clinical consultations, including the use of screening tools and awareness of risk factors that signpost family food insecurity. Examples of services and clinician-assisted referrals to support vulnerable patients are provided, alongside suggested methods to implement further education for the multidisciplinary healthcare team.

INTRODUCTION

The United Nations (UN) Food and Agriculture Organisation defines food insecurity as a state whereby a person lacks 'regular access to enough safe and nutritious food for normal growth and development and an active and healthy life'.[1] Food insecurity can manifest in different ways, and often follows seasonal or cyclical patterns. People may reduce their food intake, follow unhealthy dietary patterns and consume nutritionally unbalanced meals to compensate.

The UN Convention on the Rights of the Child outlines that children have the right to adequately nutritious food, and where parents and caregivers cannot provide this, State Parties should provide assistance to families.[2] In this article, we hope to raise awareness of food insecurity among the families of children and young people (CYP), and the detrimental impacts it can have on health and development (box 1). We provide practical solutions for how child and young person food insecurity can be prevented, identified, assessed and addressed by healthcare professionals (HCPs).

Defining the problem of child and young person food insecurity in the UK

CYP are particularly affected by food insecurity in the UK. In 2016, 11.5% of households with children were estimated to have experienced FI and by September 2020, this figure was estimated to have risen to 14%.[3] This equates to 4 million people, including 2.3 million children.[3] Households were deemed food insecure if any household member had smaller meals, skipped meals, been hungry but not eaten, or gone a whole day without eating because they could not afford or access food. In 2019, 1.3 million CYP were eligible for free school meals (FSM), an indicator of food insecurity.[4] However, a further 1 million CYP experiencing food insecurity were ineligible to receive FSM,[4] suggesting the current eligibility criteria do not meet all CYP's food requirements. The COVID-19 pandemic has contributed to increased financial insecurity and unemployment, not only highlighting but also exacerbating food insecurity for families with CYP.[5]

The impact of food insecurity on health and educational outcomes

Addressing food insecurity

During your clinical consultation

1. Growth should be assessed by recording and plotting weight, height and body mass index (BMI) on growth charts, comparing with previous measurements. This will

Box 1 The effects of food insecurity on different stages of child development

Since eating behaviours are formed during early life, the effects of poor nutrition are transient and manifest themselves in all stages of child development. As food insecurity is inextricably linked to other social issues such as poverty, it is challenging to isolate the effects of hunger on physical and mental well-being. Below we describe the main effects on key developmental stages:

- *In utero and early years*: faltering growth; delayed cognitive and behavioural development, diminished immunocompetence, vitamin A deficiency and anaemia.[20]
- *School years*: development of childhood asthma[4] and iron deficiency, which is often associated with learning impairment and decreased productivity.[21]
- *Adolescence*: mental health risks (depression, suicidal thoughts), substance abuse disorders, behavioural consequences (hyperkinesia, reduced academic performance).[21]
- *Adulthood:* adult disease, including chronic obstructive pulmonary disease (COPD),[4 21] cardiovascular disease and cancers, asthma, autoimmune disease.[21] Survivors of malnutrition also suffer from diminished intellectual performance and low work capacity in adulthood.[21] Studies controlling for variables such as educational attainment and income have established associations of food insecurity with hypertension and hyperlipidaemia.[22]

enable the recognition of an abnormal BMI or faltering growth.[6] Recognise that both a low and high BMI can be a sign of food insecurity.

2. Patients should be assessed for associations or comorbidities of malnutrition such as iron deficiency anaemia, tooth decay and impaired cognitive or physical development.
3. Poor control of some long-term conditions such as asthma, diabetes and poor mental health could be related to food insecurity.[7]
4. A history should address education, home environment, family background, family finances and parental factors. Be aware of risk factors of food insecurity(figure 1).
5. Food insecurityscreening can aid in identification of [8]food insecurity (box 2).
6. If food insecurity risk factors are presented or food insecurity is suspected, take a more detailed dietary history for the household. It is important to understand nutritional value of food (eg, asking about fresh fruit and vegetable intake) and eating behaviours (eg, asking about daily meal frequency and how many meals are homemade, frozen or a fast food).

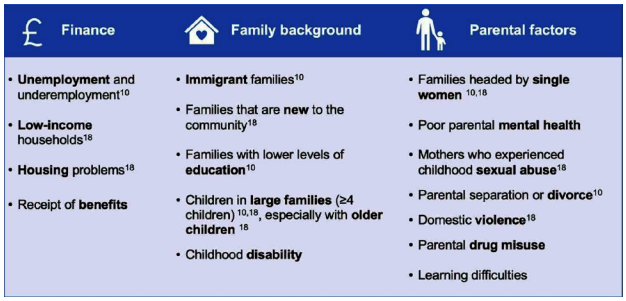

Figure 1 Food insecurity risk factors. This figure outlines the main risk factors that predispose families to food insecurity.

Box 2 Examples of screening tools

Hunger-vital signs

This is a two-item screening tool[13] that identifies household food insecurity in a short and accurate manner. It can be adapted to capture food insecurity in the past 30 days or 12 months.

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more.
2. Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.

Household food security survey

An 18-item screen used to assess household food insecuritywith the use of a numerical scale.[17] It can be shortened to six items if needed, as shown below, however, it will not capture the more severe levels of food insecurity.[17]

Q1. 'The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more.' Was that often, sometimes or never true for (you/your household) in the last 12 months?

Q2. '(I/we) couldn't afford to eat balanced meals.' Was that often, sometimes or never true for (you/your household) in the last 12 months?

Q3. In the last 12 months, since (date 12 months ago) did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food? (YES/NO)

Q4. (Ask only if Q3=YES) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

**Optional to repeat Q4, if Q1 and Q2 are affirmative.*

Q5. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food? (YES/NO)

Q6. In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food? (YES/NO)

Food security status level can be categorised as 'food secure', 'food insecure without hunger' or 'food insecure with hunger' according to the number of affirmative responses.[17]

To approach food insecurity sensitively

HCPs have reported difficulty in initiating food insecurity conversations.[9] Some suggested approaches are outlined:

1. Reassure that surveillance questions are asked routinely so that patients do not feel singled out.[10]
2. Open-ended questions should be used to explore patient concerns. This could include: 'Please let me know if either you or someone from your family has been feeling hungry in the past few weeks'.
3. Written/electronic surveillance is preferred over verbal food insecurity surveillance. This increases food insecuri-

ty disclosure[11] as patients may feel less comfortable when sharing food insecurity experiences verbally.
4. Resources such as posters can inform patients of the high prevalence of food insecurity and normalise discussions.[12]

Screening tools

Screening tools could be implemented routinely for all CYP engaging with primary or secondary care services and can be administered by multidisciplinary team members. To facilitate routine questioning, screening tool prompts can be added to electronic health records or documentation proformas. Alternatively, screening might be targeted at CYP presenting with conditions associated with, or risk factors for food insecurity (figure 1). Screening tools are especially significant given that CYP may not have physical signs, abnormal weight or BMI or abnormal investigations.[13] We provide examples of the Hunger-Vital Signs and Household Food Insecurity Survey, which are screening tools for food insecurity in box 2.

It is important for those delivering the screening tool to recognise its disadvantages. The screening tools do not acknowledge different household members may experience varying levels of food insecurity and ignore non-economic reasons, such as availability of transportation to access food, neglect due to parental health problems, and the nature or schedule of parental occupation. Furthermore, frequency of food insecurity experiences is used as a measure of severity,[14] thus, one may be less likely to identify newly developed, seasonal or marginal food insecurity.

How can HCPs address food insecurity among CYP?

Individual level

The consultation is a valuable interaction for HCPs to initiate conversations about food insecurityin a non-judgemental manner and offer solutions for support. Facilitation of enrolment to relevant services is beneficial. HCPs in primary and secondary care can refer CYP to social prescribing link workers or services. These are valuable in signposting to programmes focusing on financial support, provision of meals, education and community initiatives. An example of a local initiative which aims to increase food security is provided in box 3.

Some of the most frequently selected interventions around the UK include benefit application support and food banks. The UK has approximately 2100 food banks, mostly operated by the Trussell Trust, and other charities offering free meals.[15]

Organisational level

Studies have shown HCPs show varied levels of food insecurity knowledge and many perceive there is little in their power that can be done.[16] An example of an organisation that has recognised this and implemented strategies to mitigate this can be found in box 4.

Box 3 Community food insecurity services: Southwark community dietetic project[23]

Southwark, like many other boroughs, is extensively affected by food insecurity as many residents, especially those who rely on benefits, are unable to afford basic food items. According to London's first measure of food insecurity in 2018–2019, '1 in 4 Southwark residents over age 16 are likely to be food insecure'.[23]

The borough decided to tackle this problem by encouraging food resilience and creating a strong community food network. To achieve this, they organised a community action project that runs 6-week cook and eat well courses, teaching families the importance of budgeting and discussing the cost of different foods and how to prepare healthy meals on a budget. For families using food banks, the courses aim to instruct them on how to use the food they receive to prepare nutritious meals, hence promoting food security in the context of money management.

The Southwark community dietetic project is only one initiative out of many. The full action plan for food insecurity in Southwark consists of several actions noting significant achievements including the use of 23 tonnes of surplus food monthly by Southwark organisations who work with the food insecure, and the involvement of more than 60 member organisations in the Southwark Food Action Alliance.

Some practical ways to educate HCPs about food insecurity could include:

- Allocate a member of the multidisciplinary team to be responsible for food insecurity. This includes having awareness of policy and programmes, introducing, and updating surveillance processes and organisation of education for staff.[8]
- Multidisciplinary case-based discussions[8] to raise awareness among staff and provide resources to support children and their families.
- Create or distribute a poster or infographic of the local available resources that HCPs can use when referring patients.

National level

Although food banks across the UK hugely benefit food insecure households, there is a growing need for more support to be made available through the development of national policies addressing food insecurity. Some examples of advocacy initiatives and evidenced-based policies that HCPs working with CYP can support are outlined below.

Universal

One approach to tackling paediatric food insecurity could be to introduce universal FSM, whereby meals would be provided at no cost to all children wanting to participate. One systematic review analysing universal FSM found there to be significant evidence supporting its introduction,[9] as below.

- Greater school meal participation among students both previously qualifying and non-qualifying for FSM,[9]

Box 4 Kaiser Permanente Food Insecurity Intervention[8]

The team at Kaiser Permanente in Colorado (KPCO) started a 3-month pilot, where they introduced measures to target paediatric food insecurity in their practice. At the beginning of the pilot in 2011, food insecurity rate in Colorado was 13.9% and it ranked in the bottom 10 states for participation in federal nutrition programmes.[8] It was designed to promote food security and improve health outcomes in KPCO and the community.

- *Screening programme*

KPCO used the Hunger-Vital Signs screening tool by providing patients with a paper form at check-in. The team has now focused their work on determining what factors enable their own and external practices to implement food insecurity screening most effectively (predictive modelling to target high-risk groups).

- *Educational intervention*

It had been established that the clinical teams at KPCO lacked awareness of the prevalence and health outcomes of food insecurity. Furthermore, they felt uncomfortable discussing food insecurity with patients. The educational intervention included educational handouts, case study presentations and educational discussions at departmental meetings. Communication skill-building exercises using simulation and written scripts were held to increase the comfort of staff in discussing food insecurity. At the end of the pilot, staff felt informed enough to be able to form a *community and clinic integration committee* to expand this programme into other clinical departments.[8]

- *Referral process*

The team at KPCO developed an active referral process by asking parents' permission to share their necessary demographics with the non-profit, Hunger Free Colorado (HFC), so that an HFC representative could call them to discuss food resources. This increased the percentage of referred parents who spoke with an HFC representative from 5% to 75%.[8]

suggesting universal FSM may reduce stigma and reach children in need from non-qualifying families.

- Associated with improved diet quality, BMI and academic performance,[9] indicating this policy could reduce diet-based disparities among schoolchildren.
- Schools reported spending less time processing applications for FSM, instead diverting time to nutritional education.[9]

Although the evidence is promising, more research examining the total cost of universal FSM is needed to establish (a) if such a policy would alleviate the societal costs associated with food insecurity and (b) if this policy would be feasible in the UK. In 2017, the Institute for Fiscal Studies estimated providing universal FSM to all primary schoolchildren in the UK would cost £950 million each year, with potential upfront costs calculated as £270 million.[17] As the pandemic continues to exert funding pressures on governments worldwide, the cost-effectiveness of a universal scheme should be evaluated before large-scale spending. The effectiveness of cheaper alternatives, such as universal breakfast clubs,[18] should also be considered.

Box 5 Example of how paediatricians supported a national advocacy campaign in the UK[24]

In 2014, the universal infant free school meals (FSM) policy was introduced for state-funded schools for children aged 4–7 years entitling them to a free school lunch during term-times. For children older than 7 years to continue receiving FSM, they must be from a qualifying low-income family or receiving certain benefits of their own. FSM were replaced by the food voucher scheme during the COVID-19 lockdown, which the UK Government announced to cease in July 2020.

Marcus Rashford worked alongside the food distribution charity FairShare to launch the #MakeTheUTurn campaign. He wrote to all Ministers of Parliament calling for an extension of the food voucher scheme to the summer of 2020. In 24 hours, 2200 members of the Royal College of Paediatrics and Child Health signed an open letter to the government in support of Marcus Rashford's campaign.[24] The scheme was successfully extended over the summer and a Winter Package to support vulnerable children until Easter 2021 was introduced.

Advocacy

HCPs working with CYP can also use their voice, through social media and through national organisations, to advocate for a change in local and national policy, to improve the lives of CYP experiencing food insecurity. An example of a successful advocacy campaign that was supported by paediatricians in the UK is provided in box 5.

Government policies

As food insecurity is largely driven by financial insecurity, government policies should follow principles supporting those most at risk of financial burden. These principles include increasing wages to all workers receiving minimum wage to a real living wage, providing those out of work with adequate benefit allowances and supporting jobseekers with skills and employability programmes.

Examples of how these principles could be implemented into UK policy could be removing the two-child limit benefit cap and extending the Universal Credit uplift.

The impact of global determinants on food insecurity demonstrates the need for intersectoral working at a national level. Food security is put under direct risk from climate change as well as non-climate factors such as population growth, the meat industry and food wastage.[19]

CONCLUSION

Food insecurityis a national crisis which has been exacerbated by the COVID-19 pandemic and particularly affects CYP. This must be addressed on individual, organisational and national levels to support those experiencing the detrimental effects of food insecurity. We recommend the following points as next steps to prevent, identify, assess

and address paediatric food insecurity. First, communities should explore interventions to address food insecurity at a local population level. Second, adequate and accessible education on food insecurity should be available to HCPs to increase awareness of paediatric food insecurity. Third, a screening tool specific to the UK population and CYP, and one which can be completed within the time restraints of clinical practice, should be developed. We hope this article serves as a prompt to initiate conversations around paediatric food insecurity as an important step to de-stigmatise and appropriately address this issue.

Correction notice This paper has been corrected since it was first published. There was a spelling mistake in one of the headings.

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