

Net Zero and Dietary Shift – How Psychology and Poverty Determine Choices

Charlotte A. Hardman

Professor of Psychology of Eating Behaviour

Department of Psychology

Institute of Population Health

University of Liverpool, UK

Charlotte.Hardman@liverpool.ac.uk



@CharlotteHardm3



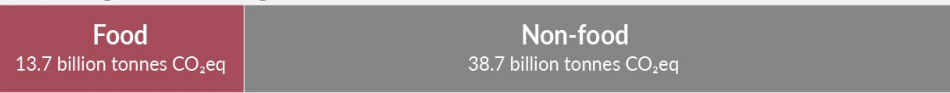
Environmental Impact of the Food System

Food production accounts for over a quarter of global greenhouse gas emissions



Greenhouse gas emissions

26% of greenhouse gas emissions come from food



Half of the world's habitable land is used for agriculture

50% of the world's habitable land is used for agriculture

Land, freshwater

70% of global freshwater is used for agriculture

Industry (19%)
Households (11%)

As things stand, by **2050** emissions from the food system will be **4x higher** than the level that is needed if the UK is to meet its net zero target

78% of global ocean and freshwater eutrophication (pollution of waterways) is caused by agriculture.



Eutrophication

78% of global ocean and freshwater pollution

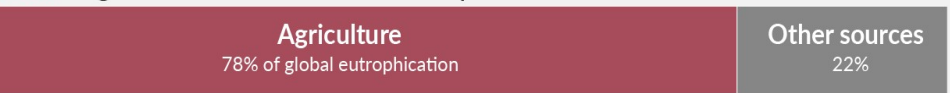


Figure 16.1

Changes needed to the national diet by 2032 (compared to 2019) to meet health, climate and nature commitments[†]



.....

[†] Three of the diet-related targets are based on advice from the Scientific Advisory Committee on Nutrition. A 30% increase in fruit and vegetables would bring us in line with the Eatwell recommendation to eat five pieces of fruit and vegetables per day; a 50% increase in fibre would bring us in line with the SACN recommended 30g/day; a 25% reduction in consumption of HFSS foods will take us towards the required 60% reduction in salt, 20% reduction in saturated fat; and 50% reduction in free sugars. A 30% reduction in meat is required to achieve the 5th Carbon budget and the 30x30 nature commitment – this represents the creation and maintenance of at least 410,000 hectares of woodland, maintaining and restoring 325,000 hectares of peatlands, and managing 200,000 hectares mainly for nature (for example, healthland and species-rich grassland some of which would be managed through conservation grazing).

National Food Strategy

Independent Review

THE PLAN.

Transitioning to more sustainable diets

More plant-based foods (e.g. fruits, vegetables, pulses, wholegrains) and fewer animal sources.



Food in The Anthropocene: the EAT-Lancet Commission on Healthy Diets From Sustainable Food Systems (2019).
[thelancet.com/commissions/EAT](https://www.thelancet.com/commissions/EAT)



WWF (2023)

<https://www.wwf.org.uk/sites/default/files/2023-05/Eating-for-Net-Zero-full-report.pdf>

What factors influence consumer product choice?



Yet, purchasing foods based on their environmental impact does not appear to influence consumer product choice as much as other factors, like price.

How can psychology help to change diets?

Three components reliably shown to increase children's acceptance of previously disliked or unfamiliar fruits and vegetables (F&V):

1. Repeated Tasting:

Repeatedly encouraged to taste F&V → increased liking and acceptance.

2. Role-Models:

Exposure to positive peers who consume F&V.

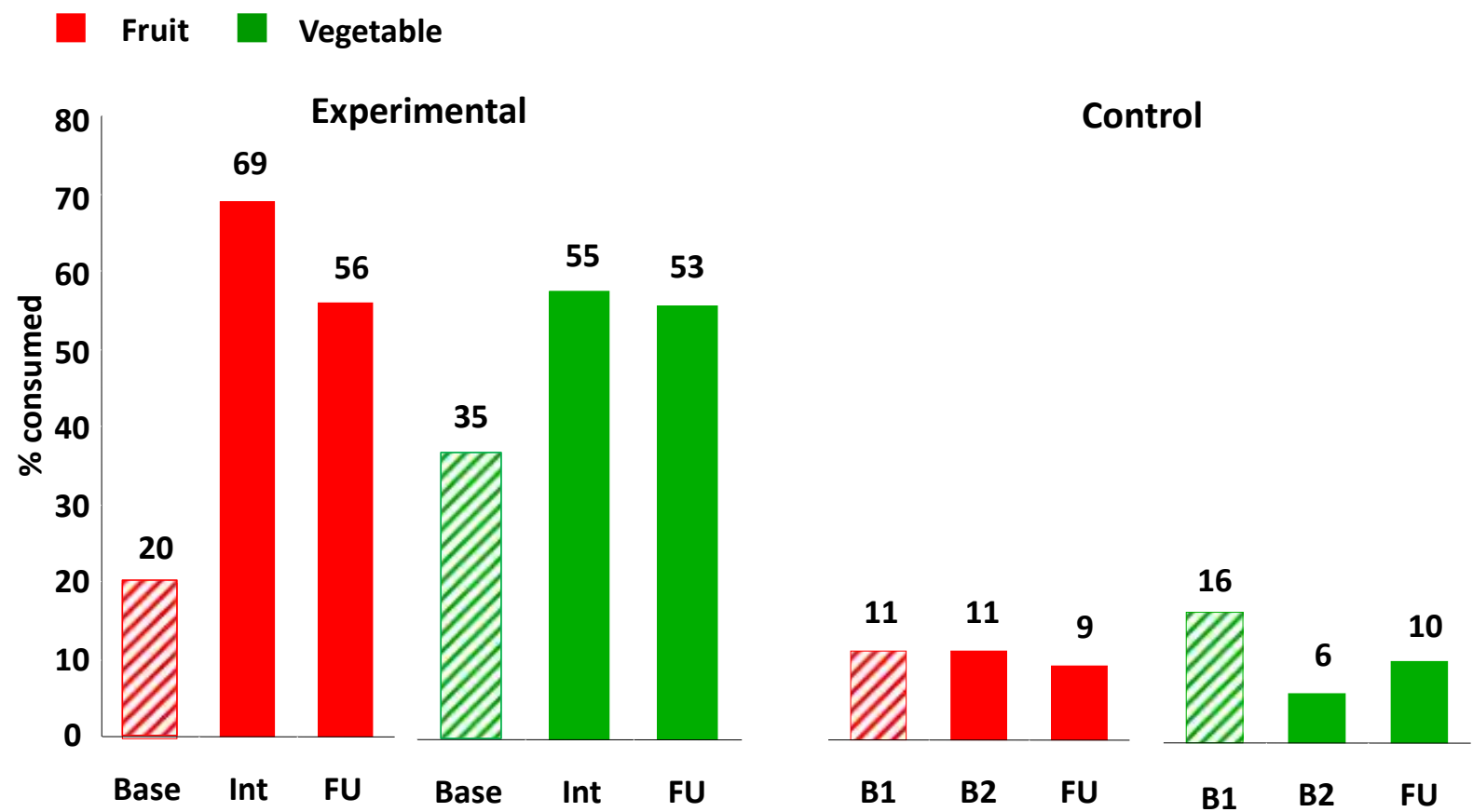
3. Rewards:

Small non-food rewards to initiate tasting.



(Appleton et al., 2018; Greenhalgh et al., 2009; Holley et al., 2017; Nekitsing et al., 2018)

Increasing fruit & vegetable intake in primary school children: the Food Dudes approach



Horne, Tapper, Lowe, Hardman, Jackson, & Woolner (2004). *European Journal of Clinical Nutrition*, 58, 1649–1660.

Food insecurity: a third of poorest households skip meals, survey finds

Large families and jobless worst hit by rising costs and austerity, with 32% and 36% missing meals

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Cost of living: Warning UK faces biggest income squeeze in nearly 50 years

🕒 8 March



Millions went hungry during first months of UK lockdown, figures show

Government data reveals up to 7.7m adults reduced or missed meals and 3.7 used food banks

- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)

Patrick Butler
Social policy
editor

Fri 26 Jun 2020 11.19 BST



Impact of the cost of living crisis of food insecurity

Source: Food Foundation/City University of London (March 2023)

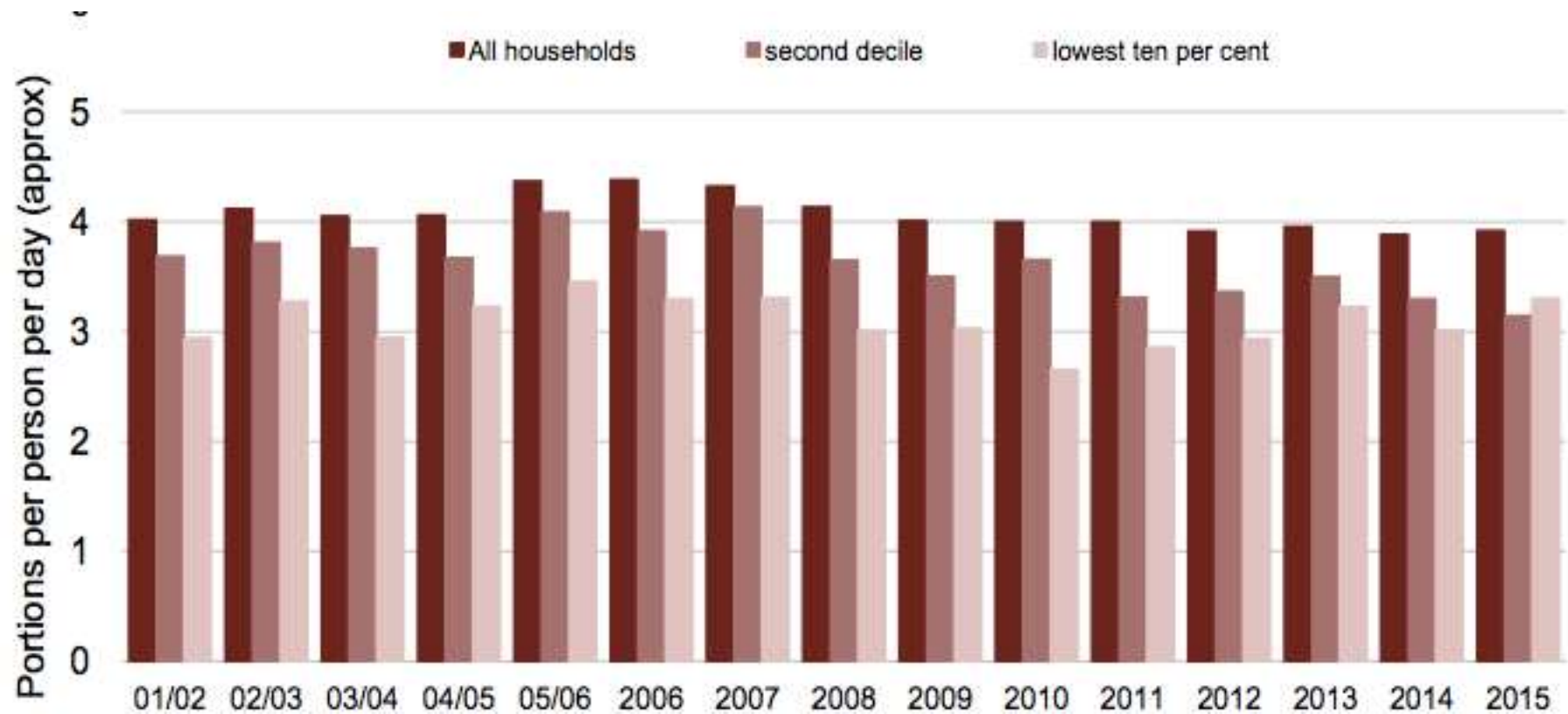
Percentage of households with children that are experiencing food insecurity*



*1-month recall period

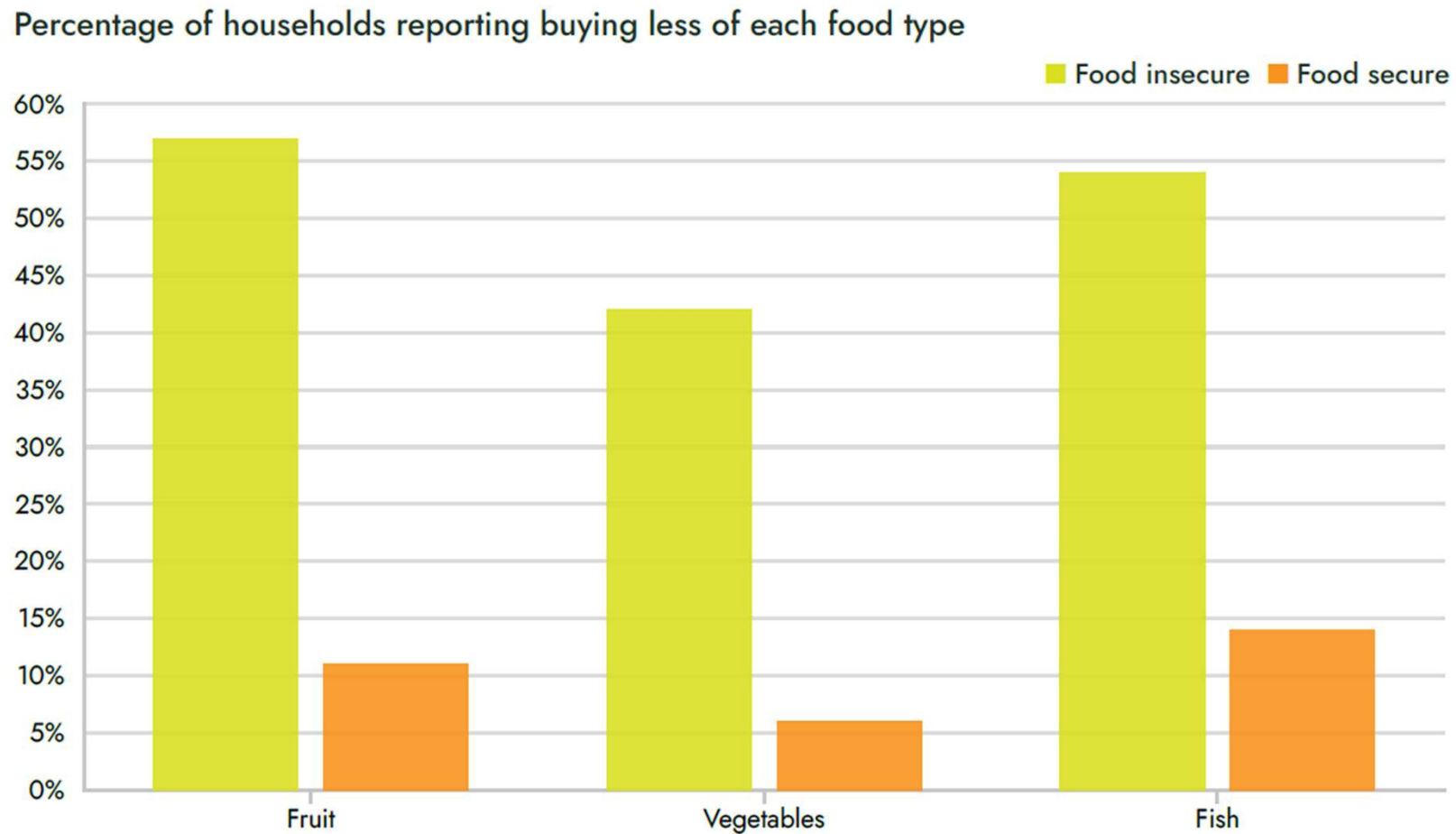
SOURCE: FOOD FOUNDATION, FOOD INSECURITY TRACKER

Fruit and vegetable purchases are lowest in the bottom deciles of income: persistent inequalities.

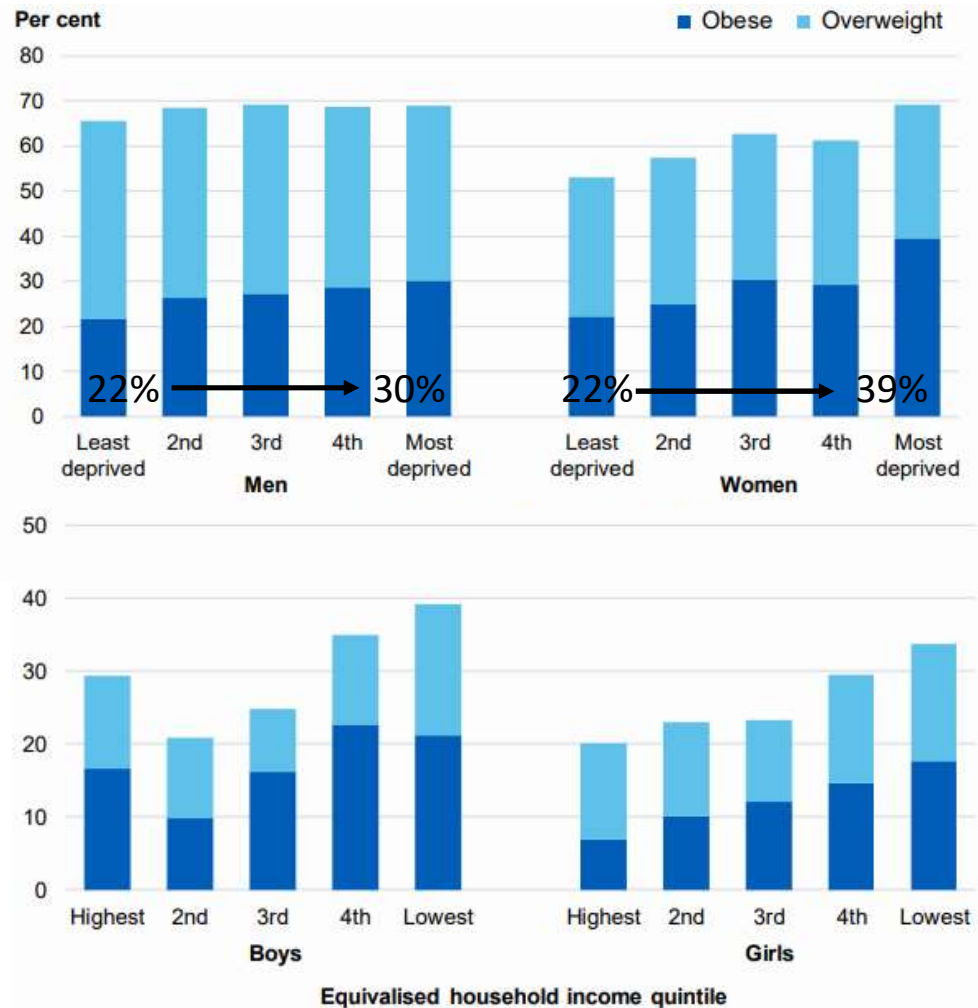


Impact of the cost of living crisis on diet quality

Source: Food Foundation/City University of London (March 2023)



Overweight and obesity patterning in the UK



Food insecurity increases risk of obesity in high-income countries (Nettle, Andrews & Bateson, 2016)

Affordability of healthy diets

On average, healthier foods are **three times more expensive** calorie for calorie than less healthy foods.

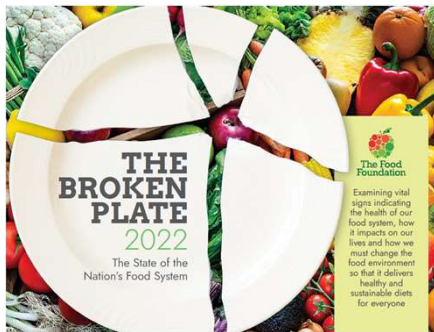
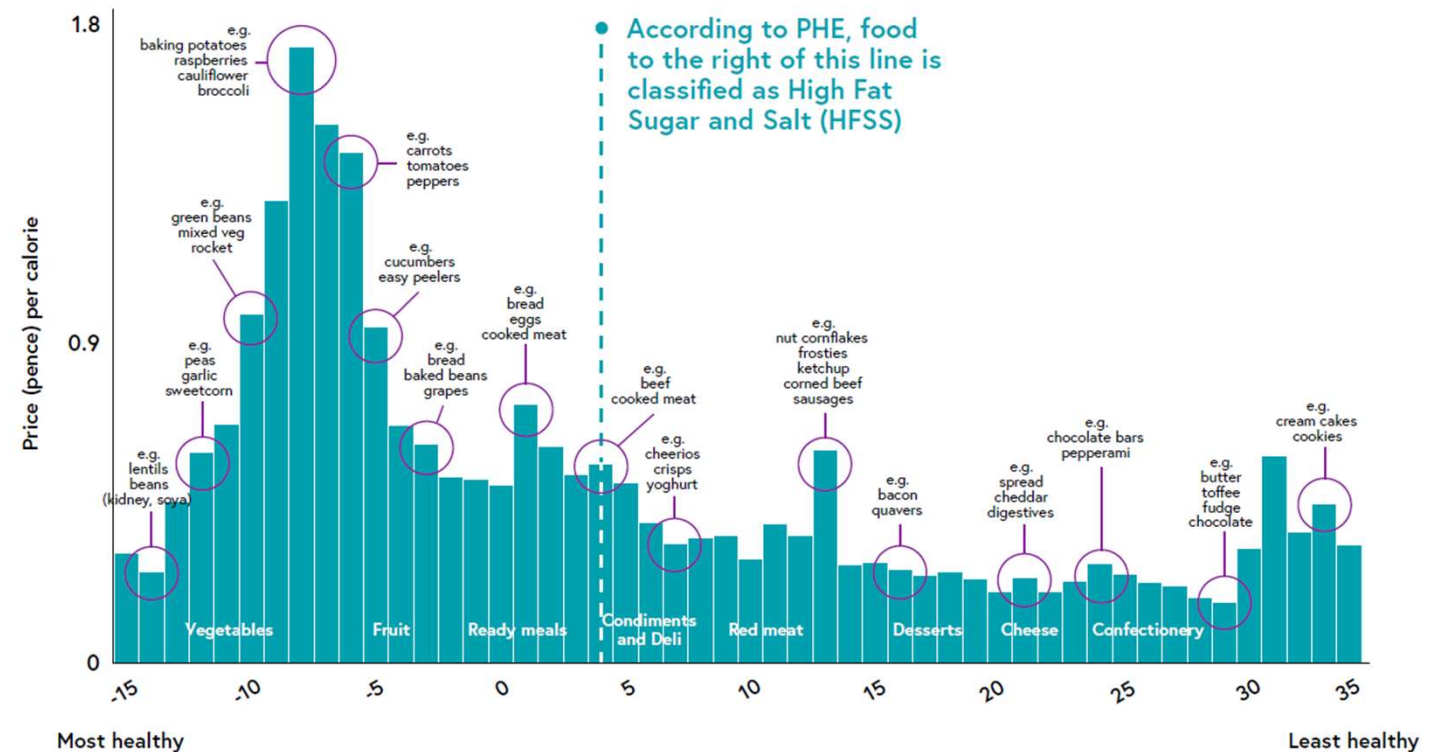


Figure 4.4

Healthy food tends to cost more per calorie^{†20}



National Food Strategy Independent Review (2021)

TEN MOST DEPRIVED FOOD DESERTS IN ENGLAND

	Areas*	Constituency
1	Marfleet, Greatfield (Kingston upon Hull)	Kingston upon Hull East
2	Hartcliffe (Bristol)	Bristol South
3	Hattersley, Mottram (Tameside)	Stalybridge and Hyde
4	Seaforth, Sefton (Liverpool)	Bootle
5	Withywood, Bishopsworth (Bristol)	Bristol South
6	Clubmore, Norris Green (Liverpool)	Liverpool, Walton
7	Greet, Sparkbrook (Birmingham)	Birmingham, Hall Green
8	Astmoor, Castlefields, Halton, Norton, Windmill Hill (Birmingham)	Halton
9	Everton, Vauxhall, Islington (Liverpool)	Liverpool, Walton
10	Kirby, Melling Mount, Simonswood (Knowsley)	Knowsley



**Can everyone access
affordable, nutritious food?**
A picture of Britain's deprived food deserts.

A report by commissioned by
Kellogg's

Health & Place 51 (2018) 224–231

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)



ELSEVIER

Health & Place

journal homepage: www.elsevier.com/locate/healthplace

Do 'environmental bads' such as alcohol, fast food, tobacco, and gambling outlets cluster and co-locate in more deprived areas in Glasgow City, Scotland?

Laura Macdonald^{a,*}, Jonathan R. Olsen^a, Niamh K. Shortt^b, Anne Ellaway^a

High energy
prices

Time
pressures

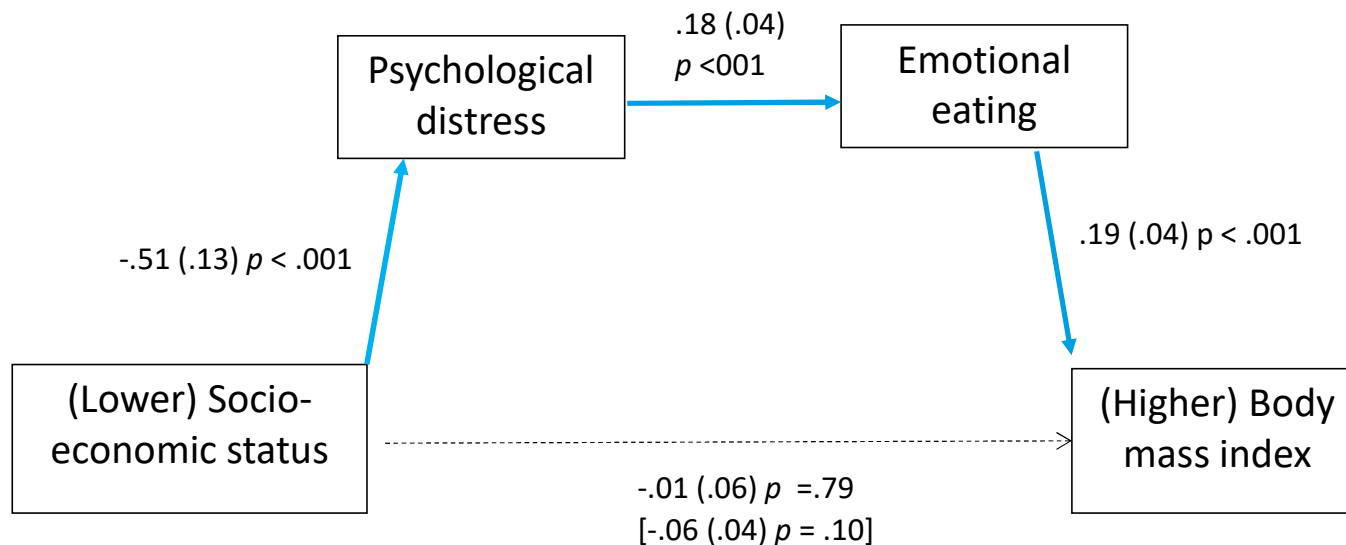
Low quality
kitchen space

Mental health

The emotional and mental health impact

- Socio-economic disadvantage and food insecurity are associated with higher levels of stress and mental health problems (Hatch et al., 2011; Power et al., 2017; Timms, 1996).
- Stress makes it even harder to make behavioural changes.
- Mood affects what we eat. Emotions such as feeling stressed, sad or anxious can lead to “eating to cope”.
 - Linked with disordered eating and obesity (Boggiano et al., 2014).

How do socio-economic disadvantage and psychological distress interact to predict eating behaviour and obesity risk?



Original Article
CLINICAL TRIALS AND INVESTIGATIONS

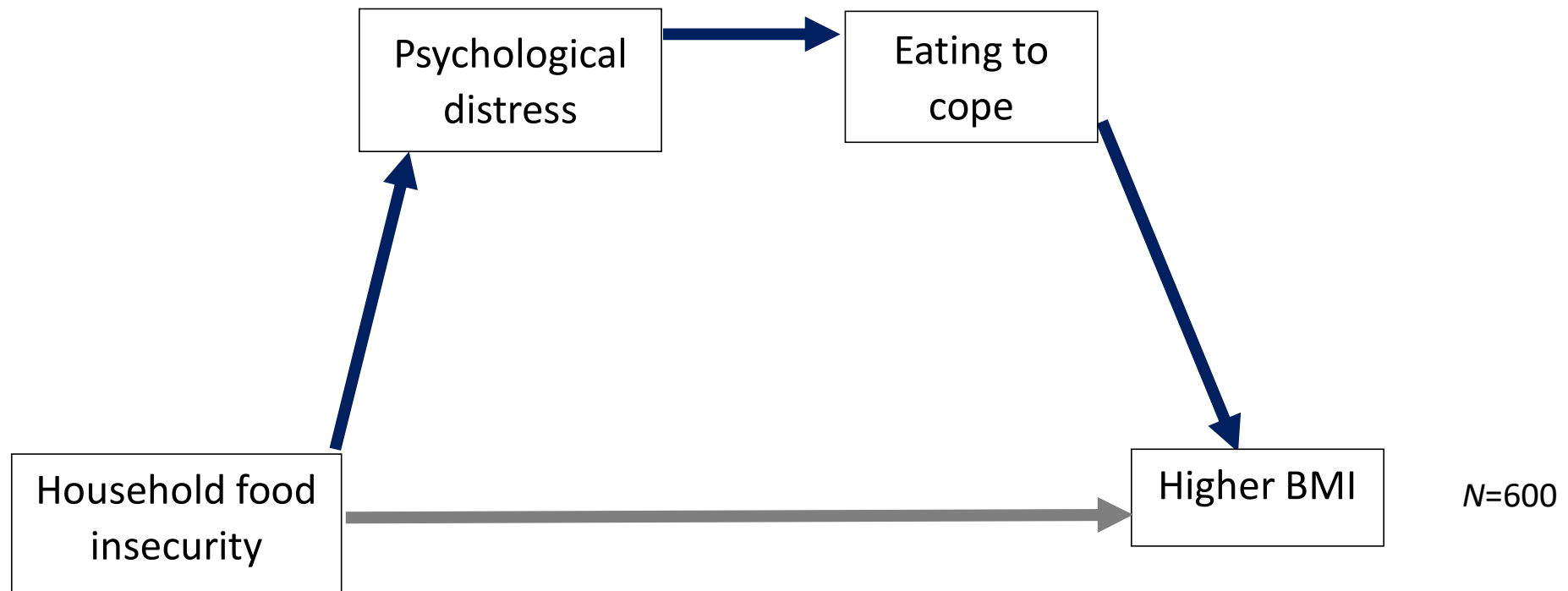
Obesity (2019) **27**, 559-564. doi:10.1002/oby.22402



From Socioeconomic Disadvantage to Obesity: The Mediating Role of Psychological Distress and Emotional Eating

Jade Spinoso ^{1,2}, Paul Christiansen¹, Joanne M. Dickson³, Valentina Lorenzetti⁴, and Charlotte A. Hardman¹

Distress and eating to cope explained the association between household food insecurity and higher body mass index (BMI).



- Food insecurity was **directly** associated with poorer diet quality, but this relationship was **not** explained by distress and eating to cope

Lived experience of food insecurity

Qualitative in-depth interviews.

❖ Adults ($N = 24$) recruited from a food bank and housing support charity in Liverpool.

What factors influence food choice and eating behaviour in people experiencing food insecurity?



Puddephatt, Keenan, Fielden, Reaves, Halford, & Hardman (2020). *Appetite*, 147, 104547.

Lived experience of food insecurity – key themes

Income:

Constant struggle of managing a limited budget and affording food

Cost of food:

Valued eating healthily but could not afford to do so.

Accessibility to shops:

Cheap supermarkets close to home. Local shops too expensive.

Food rationing strategies:

Skipping meals, small portions, cooking in bulk & freezing, prioritising children.

Health issues:

Ability to go food shopping, and prepare & cook food.

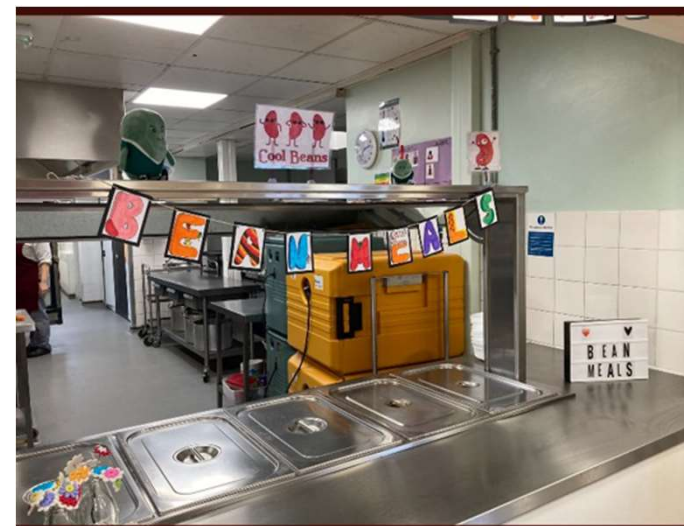
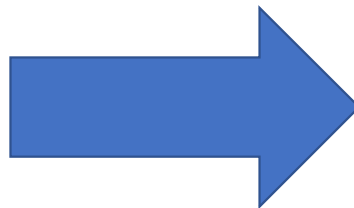
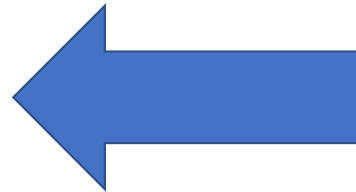
Worsened health outcomes:

Low income, lack of access to food, poor diet and eating patterns worsened physical & mental health.

Puddephatt, Keenan, Fielden, Reaves, Halford, & Hardman (2020). *Appetite*, 147, 104547.



Principal Investigator: John Ingram, University of Oxford
Work Package 1 Lead: Charlotte Hardman, University of Liverpool





Food Insecurity in people living with Obesity
- improving sustainable and healthier food choices in the retail FOOD environment



Overall Aim

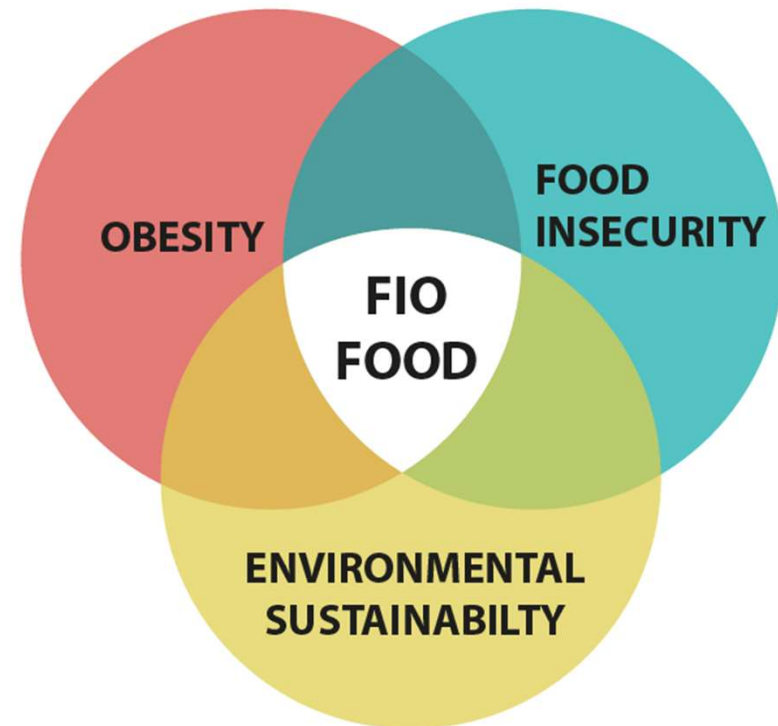
To provide actionable evidence for policy on retail strategies to address dietary inequalities in people living with obesity and food insecurity, to support sustainable and healthier food choices in the UK food system.

Collaboration

FIO Food is a collaboration between University of Leeds, University of Liverpool, Robert Gordon University, Leeds Beckett University and University College London, led by University of Aberdeen. Sainsbury's is our project partner.



Sainsbury's



<https://www.abdn.ac.uk/rowett/research/fio-food-1737/>

@FIOFood

Principal Investigator: Alexandra Johnstone, University of Aberdeen
Work Package 1 Lead: Charlotte Hardman, University of Liverpool

Summary

- Knowledge of the psychology of food preferences provides novel targets for interventions to increase healthy, sustainable diets.
- Food choices in lower income groups are strongly constrained by structural issues (e.g. affordability, accessibility), which is a major barrier to achieving net zero in agri-food.
- Importance of understanding the interplay between food/financial insecurity, mental health and the psychology of eating.
- Importance of working in partnership (e.g. schools, retailers) to change behaviours of multiple actors in the system.

Implications & take home messages for policy and practice

- Systems-approach is essential.
- Importance of lived experience and co-design.
- Use evidence-based strategies.
- Avoid language of blame and personal responsibility.